METAL PRODUCTS MANUFACTURING

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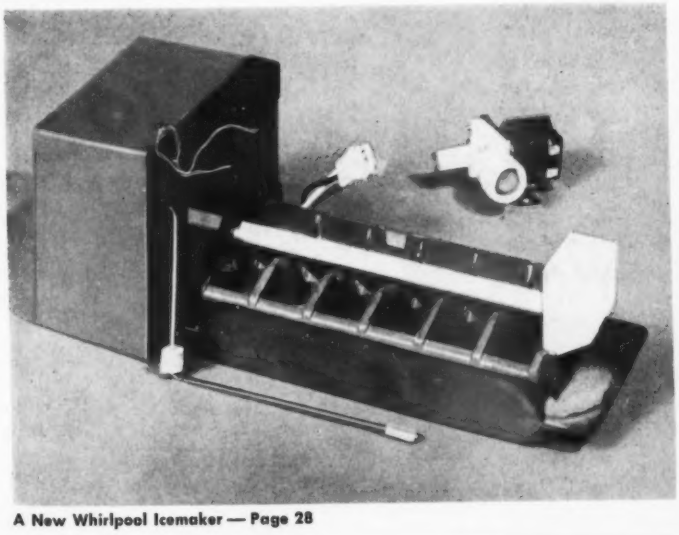
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Serving the Appliance and Fabricated Metal Products Industry



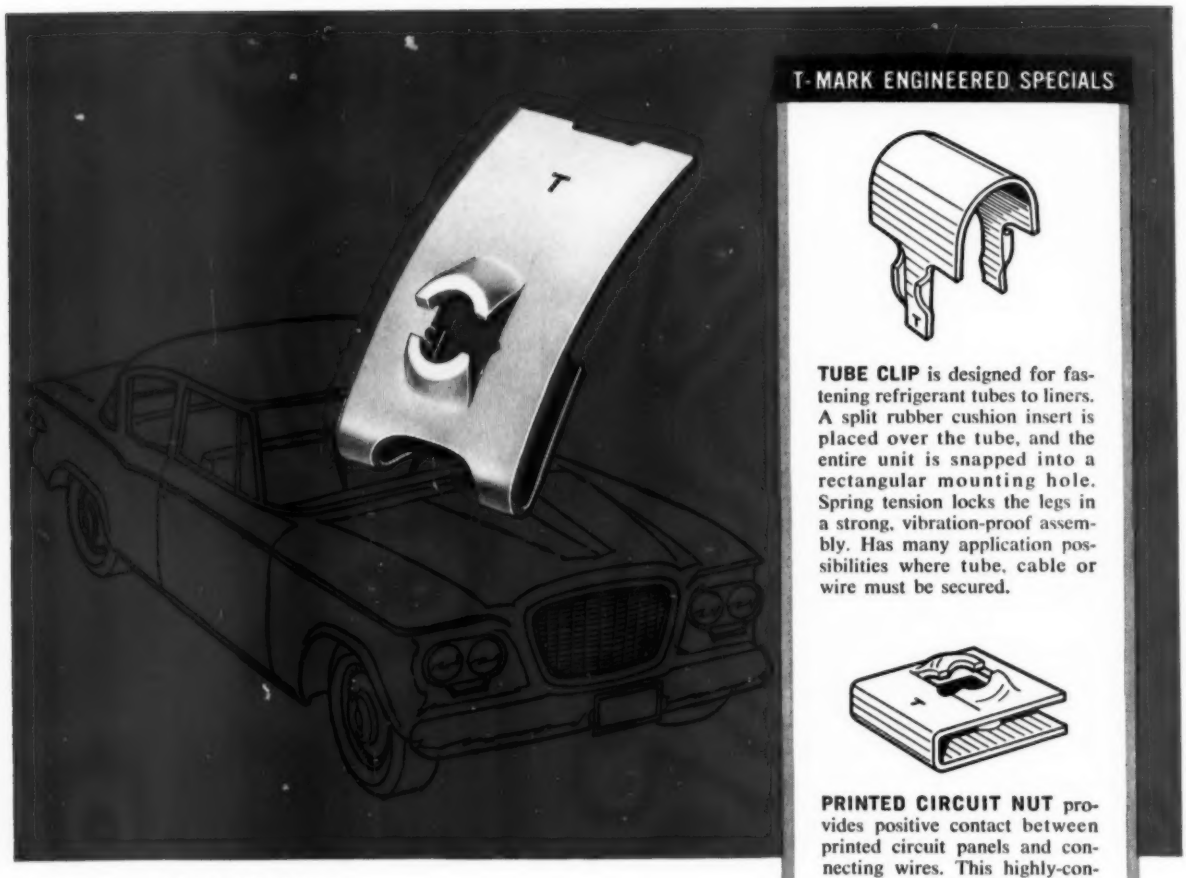
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A New Whirlpool Icemaker — Page 28



MPM Staff Reports on Major Industry Meetings



A Tinnerman T-Marked Original...

Studebaker Lark assembled faster, at lower cost with SPEED NUTS®

The rear fenders of the new Studebaker Lark are secured in a vibration-proof, watertight seal with this special heavy gauge Tinnerman J-type SPEED NUT brand fastener. It eliminates rubber stripping and costly spot-welded bearing plates, and allows the fenders to be easily removed for repair.

Preassembled to the Lark's rear quarter panel, the J-nuts hold themselves in place while the panel is first attached to the chassis. The fender is then positioned on the quarter panel and the acme bolts driven home.

In applications like this—where *total* fastener reliability is vital—Tinnerman SPEED NUT brand fasteners are your only choice. Only Tinnerman maintains *total* quality control from coil strip selection to finish coat. The Tinnerman T-mark on every fastener is your assurance of that quality.

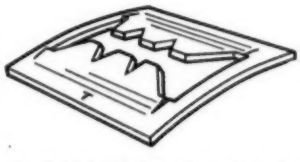
For samples, literature, prices, call your Tinnerman sales office ... listed in the "Yellow Pages" under "Fasteners." Or write to: *Tinnerman Products, Inc., Dept. 12, Box 6688, Cleveland 1, Ohio.*

TINNERMAN
Speed Nuts®
Look for the Tinnerman "T"

T-MARK ENGINEERED SPECIALS

TUBE CLIP is designed for fastening refrigerant tubes to liners. A split rubber cushion insert is placed over the tube, and the entire unit is snapped into a rectangular mounting hole. Spring tension locks the legs in a strong, vibration-proof assembly. Has many application possibilities where tube, cable or wire must be secured.

PRINTED CIRCUIT NUT provides positive contact between printed circuit panels and connecting wires. This highly-conductive, phosphor bronze fastener snaps firmly over terminal area, allows wiring connections to be made at any station on the assembly line. A screw through the eyelet wire completes the assembly. Easy to assemble ... easy to service.



RUBBER STRIP FASTENER locks bumper strips on a famous-name vacuum cleaner, can solve rubber-strip fastening problems in many fields. This SPEED NUT brand fastener is simply pushed over one end of the bumper strip. Triple-tooth prong secures strip firmly while bumper is wrapped around cleaner base and anchored with identical fastener. No special tools required.

CANADA: Dominion Fasteners Ltd., Hamilton, Ontario. GREAT BRITAIN: Simmonds Aerocessories Ltd., Treforest, Wales. FRANCE: Simmonds S.A., 3 rue Salomon de Rothschild, Suresnes (Seine). GERMANY: Mecano Simmonds GMBH, Heidelberg.

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Good Forming Qualities of ZINCGRIP Increase Cost-Saving Opportunities

These parts indicate the excellent formability of Armco ZINCGRIP Steel.

New steels are born at Armco





Practically any part that can be made of steel can be made of Armco ZINCGRIP® Steel. It offers many opportunities to save money on corrosion-protected hidden parts in your appliances. The zinc coating on this special steel takes as much forming as the base metal without flaking or peeling.

Capitalize on high customer acceptance of steel; put the distinctive Steelmark on the products you make.

At less cost than painting or plating, ZINCGRIP will usually provide all the corrosion protection you need. Because ZINCGRIP parts go straight from the forming line to the assembly line, production is simplified, too.

If you would like more information on Armco ZINCGRIP Steel or to discuss specific cost-saving possibilities with an Armco Sales Representative, write **Armco Division, Armco Steel Corporation, 2901 Curtis Street, Middletown, Ohio.**

ARMCO **Armco Division**

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HERO-MAKING

ISN'T OUR LINE—BUT...

OUR Appliance Control Specialists at King-Seeley live by a philosophy of "Creative Destruction". That's a simple way of saying we serve appliance makers—and the public—by successful departures from the conventional that help create sales—and profits.

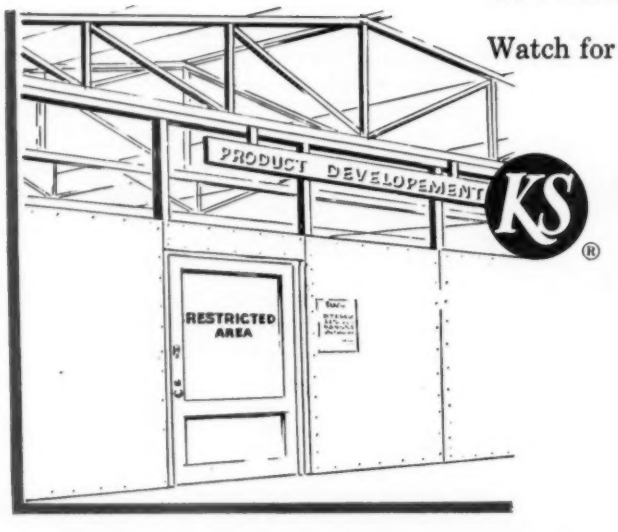
Year by year, we regularly help produce a remarkable by-product—heroes.

Mostly we work with designers, engineers, buyers and production men—but we never—never—forget that it's the sales people who have to live with our products.

So we make controls that help sell—and help keep sold—the appliances in which they are used. This helps make heroes of us all. The successful creative Sales Manager is a hero to his dealers, his own gang and his stockholders—and so are our friends, the buyer, the engineer and the designer—and incidentally, so are we.

In 1962, we're going to do our best job of hero-making yet, with one of the most remarkable control developments in all appliance history.

Watch for it.



KING-SEELEY DIVISION

KING-SEELEY KST THERMOS CO.

ANN ARBOR, MICHIGAN

Circle No. 322 on Reader Service Card.

DECEMBER • 1961
VOL. 18 • NO. 12

MPM

(including finish)

MONTHLY TRADE PUBLICATION
Established January 1944
Published by
DANA CHASE PUBLICATIONS, INC.
York Street at Park Avenue, Elmhurst, Illinois
Telephone • TErrace 4-5280 • TErrace 4-5281

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METAL PRODUCTS MANUFACTURING

FROM RAW METAL TO FINISHED PRODUCT

A trade publication devoted to the interests of the metal products manufacturing industry with special editorial attention to home appliances. The editorial scope covers design, engineering, market and statistical information and technical and practical information on plant facilities and all phases of manufacturing "from raw metal to finished product." Free controlled circulation to top management, sales management, purchasing, engineering and key plant management and supervision in metal product manufacturing plants. To others, subscription price is $10.00 per year, domestic. To all other countries $15.00 per year (U.S. funds). Single copies, $1.00.

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DANA CHASE PUBLICATIONS, INC.
PRINTED IN U.S.A.

Accepted as a controlled circulation publication at Aurora, Illinois.

Editor and Publisher • DANA CHASE
Associate Editor • WM. N. LARSEN
Associate Editor • RAY SCHUSTER
Publisher's Assistant • DOROTHEA C. MEEKER
Circulation Manager • KATHRYN KOENIG
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What the flatware story means to you



PHOTO BY ROBERT C. HOFFNER

The elegance and exquisite beauty of Stainless Steel is steadily gaining in favor with the manufacturers of flatware. America's leading tableware craftsmen are specifying Sharon Stainless Steels more than ever. They find it easy to work with and like the natural patina it develops with age and use. In fact, they have found it to be the answer to the threat of foreign imports. For lasting durability, with an accent on product beauty, you'll be sure to find other manufacturers of high quality products also thinking Stainless Steels . . . and specifying them from the *Sharon Steel Corporation, Sharon, Pennsylvania.*

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COMPLETE PAINT FINISHING SYSTEMS

...from automobiles, to appliances, to office machines, ROSS PAINT FINISHING SYSTEMS handle everything. METAL CLEANING through DRY-OFF on to SPRAY BOOTH into SOLVENT VAPOR ENCLOSURE to FLASH OFF into PRIME COAT BAKE OVEN on to FINISH COAT then to FINISH COAT BAKE OVEN into COOL on to INSPECTION.

The whole system is an engineered combination of the most modern ROSS components including metal preparation units, spray booths, flow coat units, dry-off ovens, air make-up units, air heaters, conveyors and air conditioning units. Now, a single responsibility for the entire system — engineered, designed, fabricated and erected by J. O. Ross Engineering. For more information send for Paint Finishing Bulletin No. PF 401.

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THE FUEL CELL—HOME POWER PLANT?

IN DETROIT RECENTLY, members of The American Institute of Electrical Engineers were told that if current interest is maintained, "it is likely that fuel cells will serve as power sources in special applications within the next five years," and that fuel cells to furnish electricity at home are "entirely conceivable."

Over 60 governmental and industrial fuel cell projects, costing $28 million annually, are currently under way. According to James B. Flynn, of the Cincinnati Gas & Electric Co., "The goal in mind is that someday this might be a cheap and compact successor to power plants . . ." Suggestions for early industrial use include such operations as plating, galvanizing, electrically cleaning, etc. Looking at the competitive angle, the electrical industry envisions the use of fuel cells to supply electricity in places too remote for power lines or gas mains, and utilizing energy in the form of bottled gas or tanks of oil.

Flynn lists the following advantages of fuel cells: silent operation, lack of moving parts, convenience in scaling power systems up or down, fewer maintenance and reliability problems, ease of tapping for supplying a variety of loads, relatively high energy per unit weight and a high specific power output particularly in the range of small sized devices.

Some indication of the growing attention to this development can be gained by the fact that there were at least six technical papers on the subject of fuel cells presented at the recent AIEE conference. One paper, by George A. Phillips, Aircraft Accessory Turbine Dept., General Electric Co., covered the "Status of Development and Future Prospects for the Ion-Exchange Membrane Fuel Cell."

The membrane cell, as described by Phillips, is simply a flexible plastic sheet which is easy to design around and is inherently resistant to shock. Hundreds of these cells have been produced with resulting manufacturing experience and test data. Phillips reported that stacks of these cells have been run on life tests for over 3000 hours.

As might be expected, early applications relate to defense activity. It is reported that certain designs now under construction for the Air Force will be operated for 30 days in an orbiting test vehicle late next year.

It is indicated that present cell performance permits 100 watts to be supplied from a unit weighing 35 pounds (suitable for a fully equipped soldier to carry for a reasonable distance). It is expected that this performance can be stepped up to 200 watts, and it requires only about three pounds of chemical to operate a 200-watt unit for 24 hours continuously.

While there is no reliable information to suggest that appliance manufacturers discontinue furnishing attachment cords for standard ac outlets, the fuel cell development would seem to be worthy of observation during the next few years by all those who manufacture products dependent upon electricity for power.—MPM

EVOLUTION—NOT REVOLUTION

I HAVE JUST READ A PROGNOSTICATION concerning the appliance industry, as it might be constituted 25 years hence. This glimpse into the future, by one of the country's leading industrial designers, shows us a future in which there may be no need for cooking ranges, refrigerators and many of the other appliances as we know them today. For example, we may be eating factory "built" foods that have had no earlier connection with earth or outside air. The "steak" may logically be a synthetic piece of meat that has out-dated the requirement for costly and lengthy procedures in growing beef and have made the butcher unnecessary.

As I remain in the mood of the prognostication, I see homes without kitchens, "open" homes without conventional doors, and bathrooms with swimming pools, sanitizing equipment for clothing, and recreational equipment. As a matter of fact, single-use, "throwaway" clothing might be more in order within the next 25 years.

Certainly anyone who has watched the speedup in technological progress during the past 25 years would be very cautious about saying that anything "can't be done" within the succeeding two and one-half decades.

There are two points which we would like to make in connection with the "wondrous future" as it relates to the home appliance industry and other important fabricated metal products.

First of all, products are sold to and used by *people*. It is our studied judgment that there are many, many people who are in no hurry to do away with the kitchen range and refrigerator, to change their diet to 100 percent synthetic foods, or to take that rocket ship to the moon. It is our thought that at least for a reasonable number of years, *there will be evolution, not revolution, in the appliance and fabricated metal products field.*

While our large, well financed companies may need to have a certain segment of their engineering and design staff working on "far out" projects relating to the days when we will commute to the moon, it is our solid belief that the companies that are to stay financially sound the next few years will need to be thinking and working in terms of *product improvement and reliability* as related to the evolution of today's products.

Then, too, in order to have the benefit of "far out" research, it is doubly important that today's products and the surrounding manufacturing and merchandising techniques be of such a nature that the people who make up the earth's population today will buy in sufficient quantities and at prices that will provide a profit for our present day leading manufacturers.

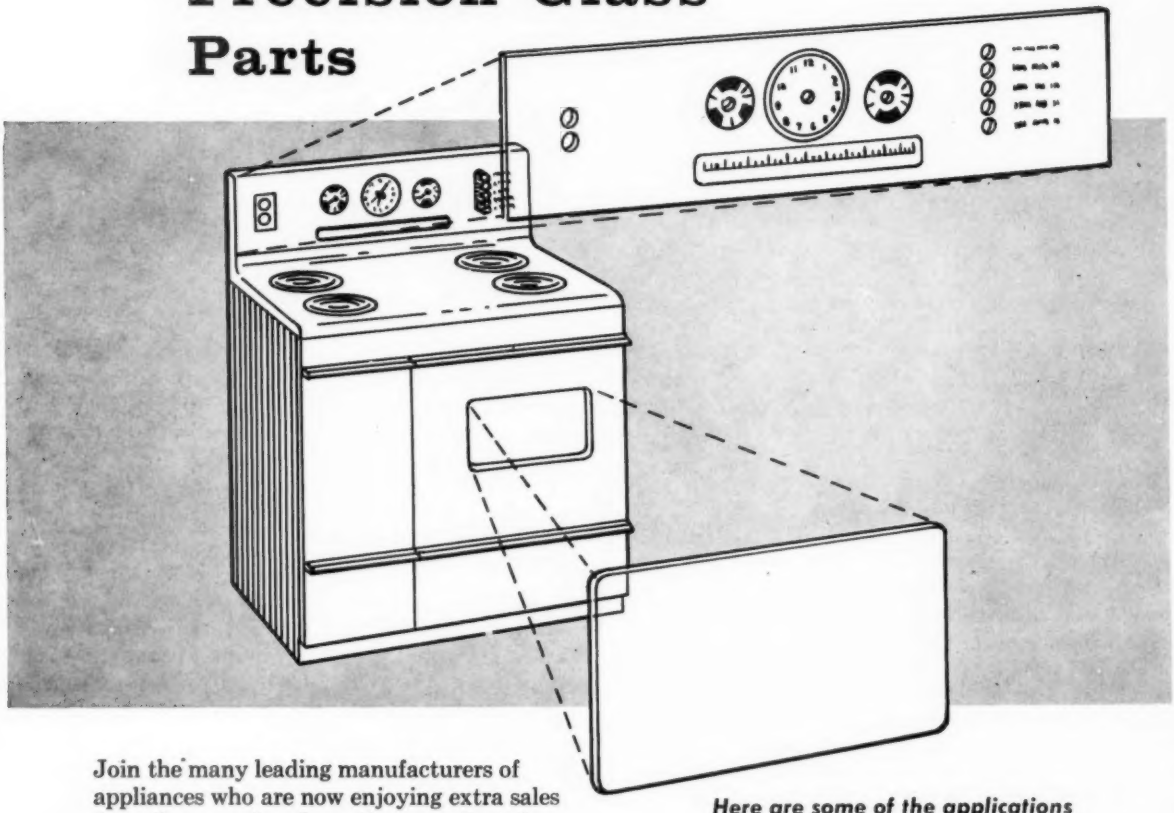
NOTE: There is reference to "evolution vs. revolution" in Mr. Strathearn's STANDARDIZATION comment on page 30.

Dana Chase

EDITOR AND PUBLISHER

MARSCO

for the finest in Precision Glass Parts



Join the many leading manufacturers of appliances who are now enjoying extra sales from the appeal and prestige contributed thru the luster of glass. Glass will enhance the beauty and broaden the acceptance of your product. It can be hardened, heat-treated or tempered to survive consumer usage unscathed.

Let Marsco's craftsmen engineering team impart to your product all the advantages of glass.

Here are some of the applications for Marsco heat-treated, tempered and hardened glass parts:

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Special Shapes for: Instruments, Gauges, Household and Industrial Appliances.

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Marsco

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SEASON'S GREETINGS
FERRO



COOK OUTS and two Verson presses help balance production at Structo Manufacturing Company

Seasonal production problems can be tough and costly. Structo Manufacturing Company, Freeport, Illinois, solved such a problem. As the world's largest manufacturer of heavy gauge steel toys, Structo balanced its production of toys for the Christmas market with the production of barbecue grills for the summer market. Two 350 ton Verson crank presses are the key units in the grill production set up. If you have production balancing problems, talk to your Verson Representative. He will be glad to show you how Verson equipment can help you in balancing production.

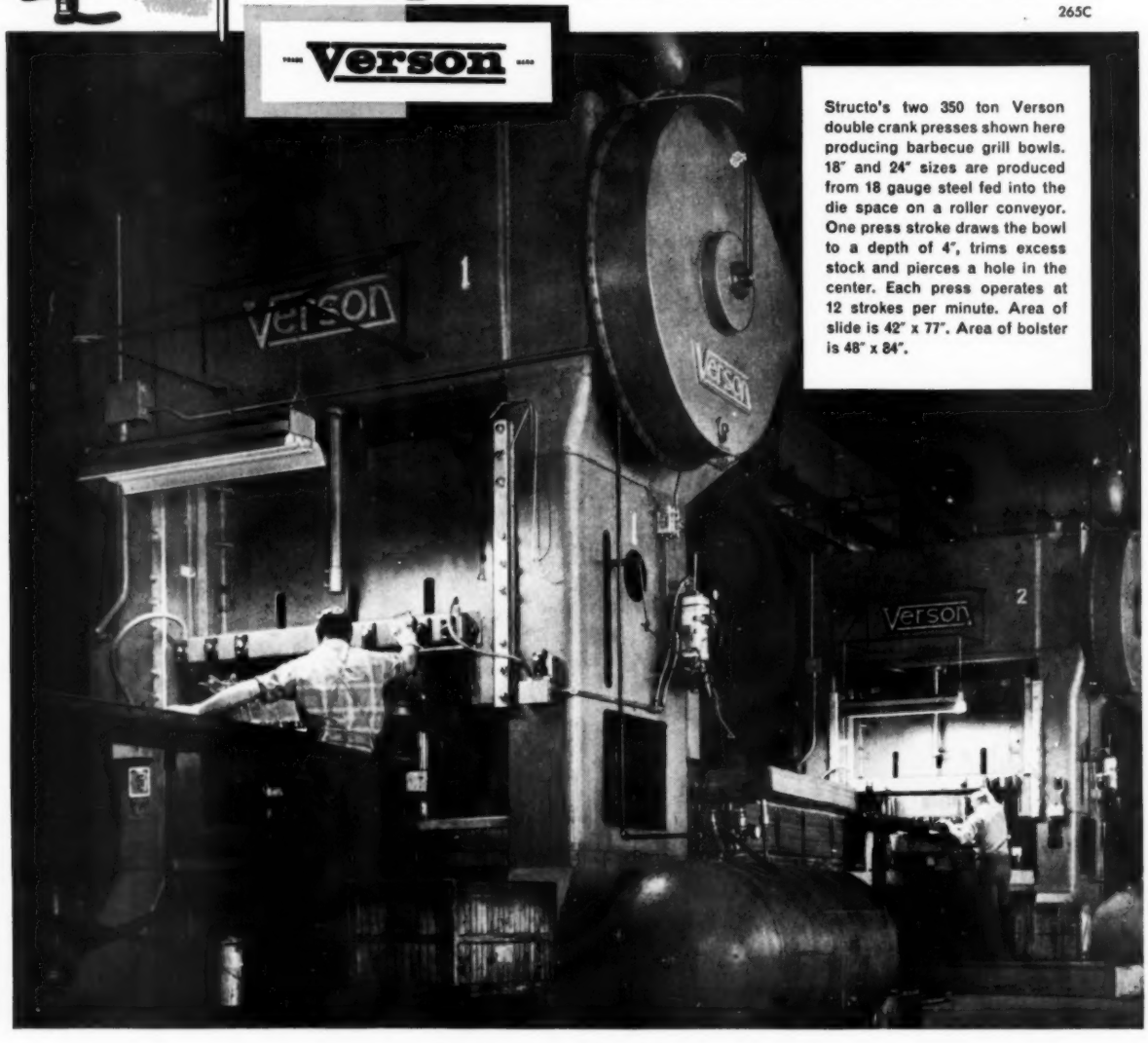
Originators and pioneers of allsteel stamping press construction

VERSON ALLSTEEL PRESS CO.

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MANUFACTURERS OF MECHANICAL AND HYDRAULIC PRESSES AND PRESS BRAKES
TRANSMAT PRESSES IMPACT MACHINING PRESSES TOOLING DIE CUSHIONS
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265C



Verson

Structo's two 350 ton Verson double crank presses shown here producing barbecue grill bowls. 18" and 24" sizes are produced from 18 gauge steel fed into the die space on a roller conveyor. One press stroke draws the bowl to a depth of 4", trims excess stock and pierces a hole in the center. Each press operates at 12 strokes per minute. Area of slide is 42" x 77". Area of bolster is 48" x 84".

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"Nobody told me it was coated with Cook's ARMORCOTE Acrylic Enamel!"



You'll be as surprised as this fellow when you learn all the facts about Armorcote, Cook's *tough* new one-coat acrylic finish for appliances. Developed after years of research by Cook's chemists, Armorcote is so superior to other finishes that you can *see* the difference with the naked eye!

Armorcote makes any appliance finish come "alive" with a rich depth of beauty. It makes *your* appliance stand head-and-shoulders above all others in any side-by-side test. In addition, Armorcote offers you the economies of *one-coat* application. Requiring no primer, it reduces your labor costs and inventory expenses. It's well suited to phosphated steel or alodized aluminum. You'll also like Armorcote's fast set-up time, high resistance to overbake discoloration and the fact that it can be easily repaired in plant or in the field.

Why not let one of our Cook representatives give you *full* information including technical data? Phone collect to the Cook factory nearest you . . . in Kansas City, Detroit or Houston. No obligation, of course. May we hear from you soon?

COOK PAINT & VARNISH COMPANY
Kansas City, Missouri

COOK'S PAINTS

RESISTS CHIPPING
Cook's Armorcote has excellent resistance to chipping, abrasion and impact.

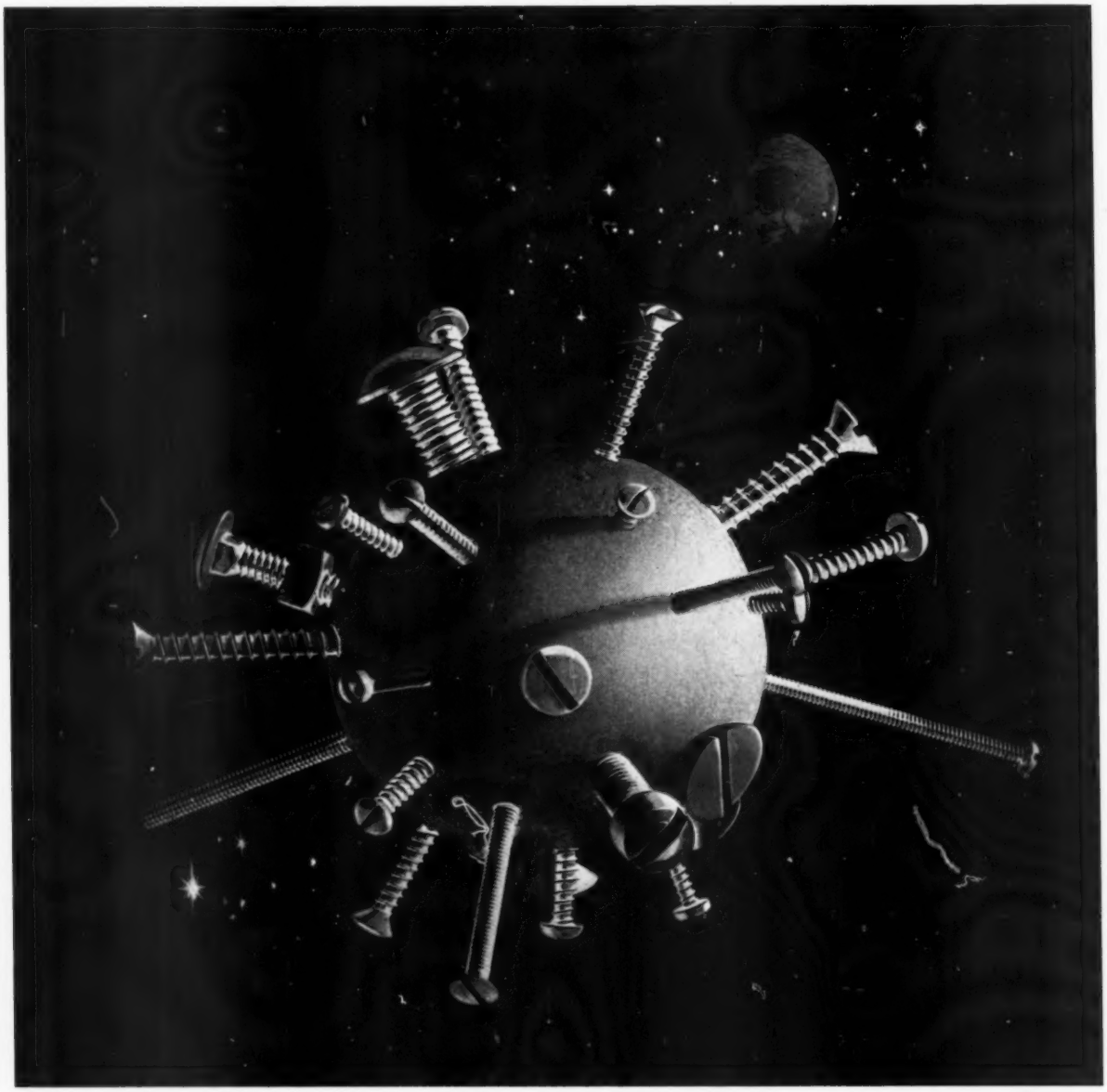
RESISTS ACIDS
Spilled foods such as acids from citrus fruits and sour milk will not damage Armorcote's tough finish.

RESISTS ALKALIES
After lengthy soaking in a 5% solution of caustic soda, Armorcote remained unaffected.

RESISTS HEAT, COLD
Careful testing shows Cook's Armorcote exceptionally resistant to varying degrees of heat and cold.

RESISTS KITCHEN GREASE
Armorcote withstands greasy kitchen fumes, even direct grease contact with no softening, no loss of color.

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If you're making plans for a new model or new product soon to be launched into sales orbit, USA-made Southern fasteners will help assure its success.

Southern Screw Company uses quality materials combined with experienced workmanship to produce the most dependable fastener your money can buy. Dependable on your production line, dependable in the service your products give.

Order Southern fasteners today from your nearest Southern Distributor, or write direct to factory: Southern Screw Company, P. O. Box 1360, Statesville, North Carolina.

TYPES 1, 23, 25, F & BF THREAD CUTTING SCREWS* • TYPES A, B, C, & BP TAPPING SCREWS* • MACHINE SCREWS* AND NUTS • STOVE BOLTS • DRIVE SCREWS • CARRIAGE BOLTS • HANGER BOLTS • WOOD SCREWS* • CONTINUOUS THREADED STUDS

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MPM

newsquotes

Some people mistakenly correlate any failure to diversify with being old-fashioned. A firm that channels all of its technical and production facilities into the manufacturing of one specific product can be aggressive; it can be a leader in its particular field; and it can offer all customers as many benefits as any other firm.—*Charles Doerger, Electric Hose & Rubber Co.*

> **It's no use researching women themselves. They are too complex; what can you do with thousands of different answers? What you have to do is research your own products.—*Scott Paper Co.***

Present management policies and practices are generally inappropriate to the task of directing and controlling the efforts of the highly trained specialist, because his work consists essentially of creative intellectual effort to aid management in its policy making, problem solving, planning and projecting, and administrative activities.—*Forrest H. Kirkpatrick, Wheeling Steel.*

> **Welding is a buoyant, fast-growing business which should double its present sales within this decade despite the current sluggish performance of industry in general.—*Alfred F. Chouinard, National Cylinder Gas Div., Chemetron Corp.***

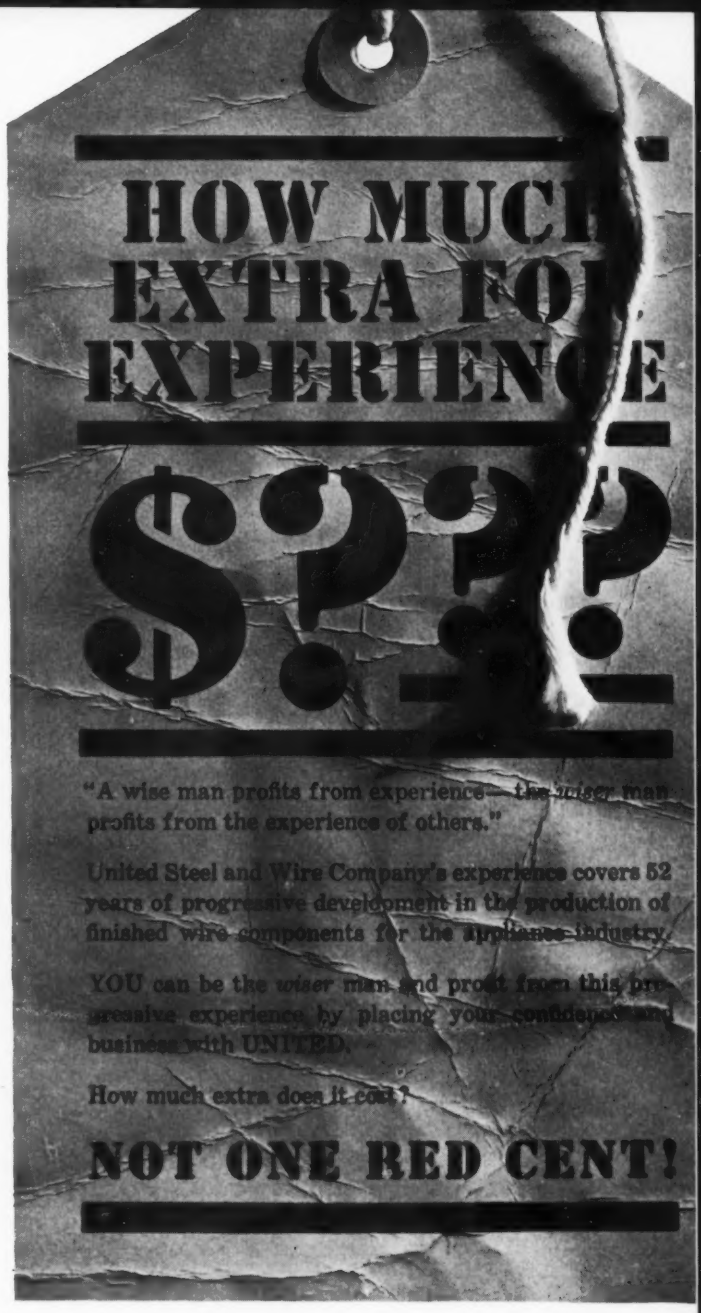
Don't use a consultant when you know the answer but merely lack the nerve. This mistake is made most frequently by management when a personnel shake-up is indicated. In this instance, you may know that certain people or jobs should be changed, but making the change is unpleasant. —*George B. Soisson, The M & T Co. (management consultants).*

> **When we stop treating customers like victims and treat them instead like our best friends to whom we owe our very survival, we will improve our point of view and understanding of them—and they can be expected to respond in kind.—*Dave Chapman of Dave Chapman, Goldsmith & Yamasaki, Inc.***

He [the consumer] is still cautious, presently saving about seven percent of his increased earnings. We hopefully believe the recent modest improvement in retail sales indicates that he is regaining confidence. When he does, and "lets go" on durables (even on 1960 spending rates) it will give the steel industry a shot in the arm.—*John F. Smith, Jr., Inland Steel Co.*

> **For an industrialist to resist automation is to risk his business existence in the face of a tidal wave of industrial progress.—*William Moreland, F. E. Myers & Bros. Co.***

America's industrial history is littered with the wreckage of businesses that died, some of them very early in their lives. Greatest single cause of their death was that they did not make a profit. Whether it be a big business or a little one, profit is the lifeblood that keeps it going.—*D. E. Reichelderfer, Armco Steel.*







UNITED Carts serve America daily!

UNITED STEEL & WIRE CO. *Largest Supplier of Wire Goods to the Food Industry*

Battle Creek, Michigan

Also manufacturers of these wire products / Dairy Cases / Beverage Cases / Bakery Baskets / Egg Cases / Shelving and Fencing / Mobile Displays

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You will find that ranges including the new Wilcolator electrical control generate showroom traffic . . . *create sales!*

For the first time, Wilcolator has made programmed cooking in a gas oven a housewife's dream come true.

You sell *time* when you sell these ovens. Time for Mrs. Homemaker to be a better wife and mother . . . minutes a day shaved from her household routine.

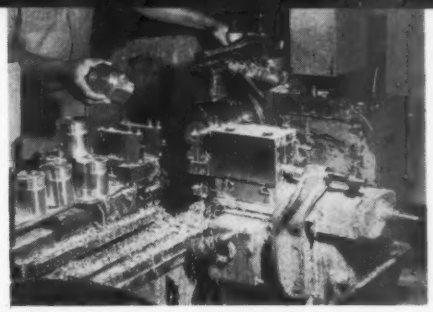
What Mrs. Homemaker can't do with this new control is hardly worth doing. From freezer to platter, for instance, a big rib roast can be thawed, cooked and "held" (for hours, if desired) with just one dial setting. Moreover, a light signals her when the oven is on; another tells her when it has reached a pre-selected temperature. Close temperature control . . . relighting at either pilot or main burner . . . 100% safety shutoff . . . and an optional "gourmet fan" are other salient (and salable) features.

Look for manufacturers' lines which incorporate this radically new concept in oven control. *They* will be setting the selling pace in the coming competitive season!

THE Wilcolator COMPANY

THE WILCOLATOR COMPANY
1001 NEWARK AVE., ELIZABETH, N.J.
Thermostats for Every Heating and Cooling Application
Subsidiaries and/or affiliates in
Canada, Great Britain, Italy, West Germany, and Australia

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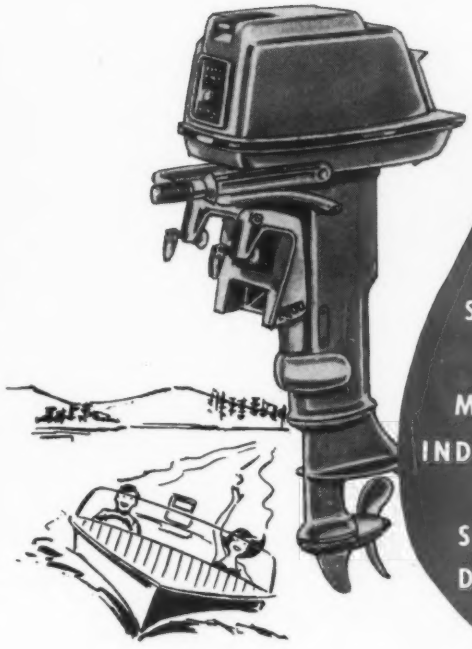
when it comes to

MACHINING
ALUMINUM and ZINC
DIE CASTINGS

NO LUBRICANT DOES THE JOB LIKE

MACCO 472 MPA

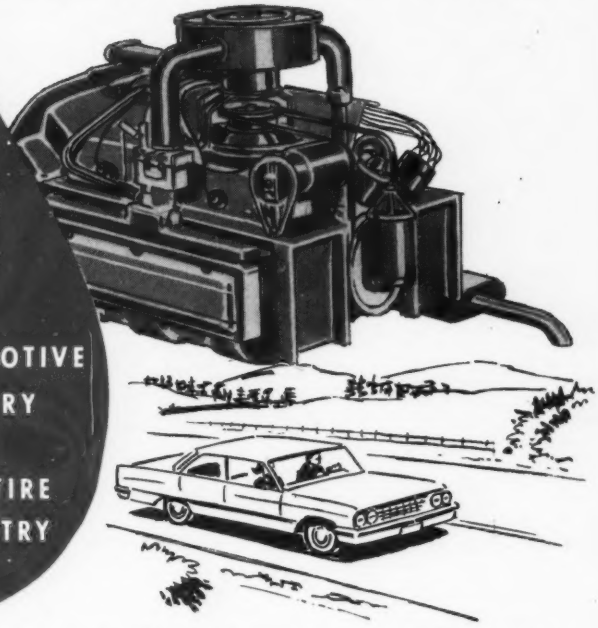
WON'T TURN SOUR!



MACCO
472 MPA

SERVES THE MARINE INDUSTRY | SERVES THE AUTOMOTIVE INDUSTRY

SERVES THE ENTIRE DIE CAST INDUSTRY



MACCO 472 MPA GIVES YOU THESE ADVANTAGES—AND MORE!

- **NO SEPARATION!**
- **NO RANCIDITY—*GUARANTEED!***
- **MORE ECONOMICAL** because of LONGER LIFE (one plant reports 17 weeks of continuous operation, as of May 25, with Macco 472 MPA against a maximum of 3 weeks with previous lubricant—and still going strong!
- **25% GREATER TOOL LIFE—BETTER FINISH!**

QUESTION: What is the most efficient lubricant for machining aluminum and zinc die castings?

ANSWER: Macco 472 MPA.

AUTHORITY: The marine industry; the automotive industry; other users. The increasing use of aluminum and zinc die castings intensified the problem of machining. And Macco solved it—with 472 MPA! You can make your machining simpler, faster, more efficient. It's easy. Just switch to Macco 472 MPA. Then, sit back and relax.

472 MPA is another of many reasons why

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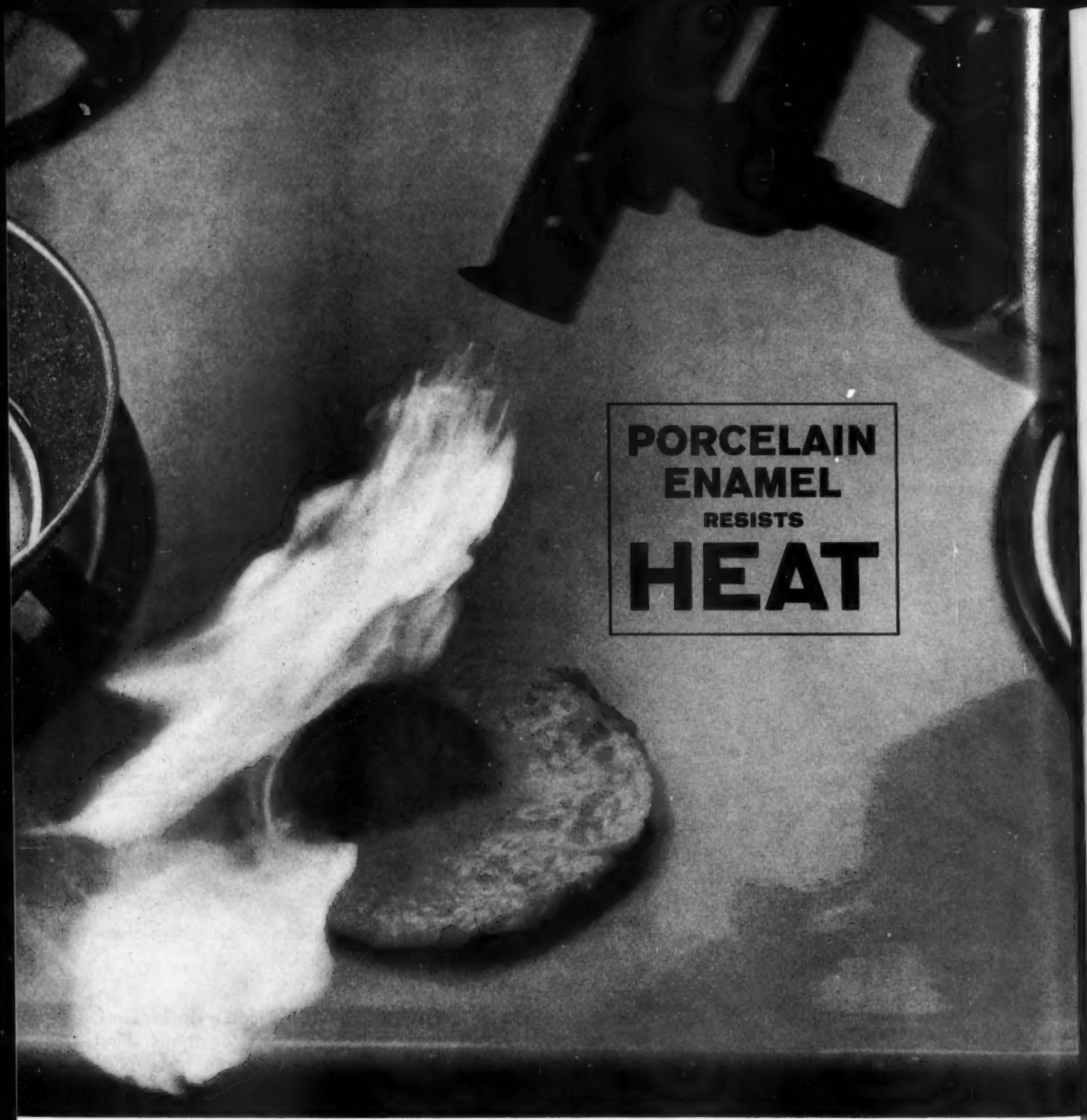


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Newly elected officers of ARI are, from left: John W. Norris, Lennox Industries, vice president; Byron E. James, McQuay, Inc., vice president; L. N. Hunter, Crane Co., vice president; Russell Gray, Carrier, president; Joseph B. Elliott, York, vice president; and W. H. Aubrey, Frick Co., treasurer. Thomas Hancock, Trane Co., vice president; and F. J. Kreissl, American-Standard, vice president, are not pictured.

Carrier president heads ARI

AN MPM STAFF REPORT

RUSSELL GRAY, PRESIDENT of Carrier Air Conditioning Co., Syracuse, N. Y., was elected president of the Air-Conditioning and Refrigeration Institute at its annual meeting held at The Homestead, Hot Springs, Va., November 12-15. He succeeds R. K. Serfass, manager of the Westinghouse Electric Corp.'s Air Conditioning Div. Gray had been a vice president of ARI for the past two years and, before that, a member of its Planning Committee and Board of Directors.

Other newly elected officers include four vice presidents: Joseph B. Elliott, president of York Div., Borg-Warner Corp.; Thomas Hancock, executive vice president, The Trane Co.; B. E. James, president, McQuay, Inc.; and John W. Norris, president, Lennox Industries.

L. N. Hunter, director of engineering of the Plumbing, Heating, and Air Conditioning Group, Crane Co.; and F. J. Kreissl, president, American-Standard Controls Div., both were re-elected vice presidents. W. H. Aubrey, president of Frick Co., was re-elected treasurer.

Estimated installed value of unitary air conditioners up 50%

The Unitary Air-Conditioner Section of ARI reported an estimated installed value of unitary air-conditioning equipment put in place in the U.S. during 1960 of over $605 million. Over $305,400,000 of this total was for home installations.

The total dollar-value listed for 1960 represents a 50 percent plus gain over the past four years (compared with the 1957 total).

The percent of the total installed value going to residential installations increased from 37 percent in 1956 to over 50 percent in 1960.

A unitary air-conditioner is a factory-packaged assembly, as differentiated from a central station system made up of field-assembled components.

In referring to 1961 accomplishments for the Institute, retiring President Serfass cited increasing growth in membership, the establishment of a new section (heating), progress in connection with standards and certification, and work with "external tax forces" impinging on the industry.

More service personnel needed

In accepting the presidency of ARI, Russell Gray referred to the establishment of the certification program for unitary air-conditioners as one of the great contributions of the institute. "I believe," he said, "we should extend certification to other products represented by our association to continue the strengthening of public confidence . . . I am hopeful that these (certification programs) will be put into effect during the coming year."

The new president pointed to one sorely needed improvement, represented by "more and better trained installation and service people."

Warm air heating joins ranks

Newest product section in ARI is the "Non-Residential Warm Air Heaters" group. The new section is headed by Maurice H. Stern, industrial marketing manager, Lennox Industries, Inc. In referring to the new section, President Gray made the point that air conditioning is *not* solely cooling, but it represents heating, cooling, humidifying, dehumidifying, air cleansing and proper air distribution.

The first objective of the heating group, as outlined by Stern, is to contact the inspection organizations for non-residential warm air heaters and attempt to establish uniform requirements. "At the present time," he said, "there are four major inspection agencies that we must deal with, and each has its own idea on how a product should be built. It is, therefore, impossible to standardize on product design, and this can only result in excessive manufacturing costs that must be passed along to the consumer. We are confident that group action through an association will be more productive in solving this problem than individual effort . . ."

The second objective is to establish a well-organized statistical program for both gas and oil-fired equipment.

The third objective is to work with government authorities that control specifications, standards and purchasing "so that modern design techniques can be used in the products furnished to our government."

A fourth objective is to up-grade the industry through the development of standards for the class of equipment represented, and to develop a well-organized performance certification program.

West Coast Exposition

The next major event sponsored by ARI is the forthcoming 12th Exposition of the Air-Conditioning, Heating and Refrigeration Industry, to be held in Los Angeles in February. The 1962 annual meeting of ARI will be held at the Hollywood Beach Hotel, Hollywood Beach, Florida, and will be scheduled in November. —MPM

Travis is new NEMA president

AN MPM PRESSTIME REPORT

HOMER L. TRAVIS, vice president in charge of sales for Kelvinator, was elected president of the National Electrical Manufacturers Association at the 35th annual meeting of NEMA held at the Plaza Hotel, New York, on Thursday, November 16. He succeeded A. D. R. Fraser, president of the Rome Cable Div. of Alcoa.

E. R. Perry, president, National Vulcanized Fibre Co., was elected vice president; and A. E. Pringle, II, president, The Pringle Electrical Mfg. Co., was re-elected treasurer.

Among nine members of the Board of Governors elected at the meeting was W. C. Wickman, general manager of GE's Hotpoint Div.

Travis needs no introduction to appliance manufacturer readers. He has served three terms as board chairman for AHLMA, has been serving as chairman of the Consumer Products Div. and as vice president and member of the board of NEMA.

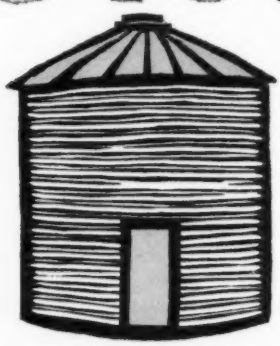


TO PAGE 70 →

WHAT FEATHERS ARE TO A



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on the farm, and wherever **protection** against corrosion is required.

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MARPROOF FINISHES THAT FOIL STAINING TOO ...M&T TEXTURED AND SMOOTH SPRAY-ON VINYLS

Beauty...distinctiveness...color...you get all of these visual qualities with the new spray-on vinyl finishes from M&T.

But that's only half the story. These coatings give your product a lasting coat of "armor" that withstands just about all the rough service users can give it. The finish absorbs impact without chipping, doesn't fade, won't stain despite constant handling.

With this *sprayable* vinyl coating you can cover even the most complex parts (impracticable with laminated vinyl finishes). It produces a rich-looking texture or satin-smooth finish on plain surfaces ... or reproduces the design of patterned metal.

Designers and producers of appliances will find M&T coatings ideally suited to their products. Not just for decorative texture and eye-appeal, but for long-term *durability*. There is hardly a finish that offers so much resistance to service hazards such as food acids, household chemicals, detergents, alcohol and water. Write for more information.

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"The girl on the trampoline" drew sizeable crowds to U. S. Steel's exhibit. Phones set up around the "stage" gave visitors information on the company's exhibit while the girl pantomimed the message.



Spacious, well-lighted Cobo Hall provided an ideal setting for the Metal Show's 275 exhibits.

MPM PHOTOS

Metals week in Detroit

43rd Metal Show takes over Cobo Hall, draws 23,632 executives and engineers

AN MPM STAFF FEATURE

EVERYTHING at the 43rd National Metal Show in Detroit's Cobo Hall was on a large scale: 275 exhibits valued at $6 million; 100,000 sq ft of exhibit space; 23,632 executives and engineers registered; 13 participating societies and associations; and 267 technical papers.

The five-day (October 23-27) "Metal Congress and Exposition" sponsored by the American Society for Metals, had 20 percent more exhibitors than at last year's Philadelphia show.

Largest program in history

The 267 papers presented at the show represented the largest technical program in the history of the event. Sessions heard reports on latest findings from metalworking plants and research laboratories from all over the United States and many parts of the free world.

One of the features of the Metal Show was a million-dollar Materials Application Center presented by ASM. Hundreds of materials, parts and components were displayed in a series of pavilions radiating from the Metal Show "Quadrilon." The pavilions, each representing a specific group of engineering materials such as "wrought ferrous," "wrought nonferrous," "composite," and "special purpose," were arranged in concentric circles.

The Materials Application Center displays ranged from massive forgings to delicate springs, and each item was accompanied by technical data to point up a successful solution to a materials application problem.

Swartz elected president

At the ASM annual meeting, Carl E. Swartz, consultant in metallurgy and materials, was elected national president of the 34,000-member materials and process engineering society. Swartz, who operates his consulting service from his office in Hinsdale, Ill., has been active in ASM for more than 25 years. He holds or shares 15 United States patents on the engineering aspects of metals.

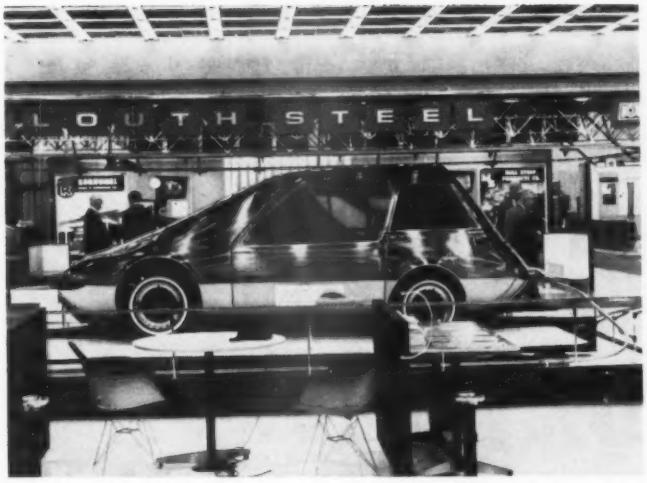
Robert J. Raudebaugh, supervisor of iron-nickel alloys for International Nickel Co., was elected vice president. MPM



Among the products shown by Wyandotte Chemicals Corp. were "Aldet," a new nonsilicated soak cleaner for aluminum and other metals; "Nuvat," a product for vitreous enameling soak cleaning which is based on synthetic-type detergents; and "Expray," a spray cleaner especially useful in vitreous enameling.

(Right) — Exhibit set up by Robodyne and Clearing divisions of U. S. Industries, Inc., featured a 45-ton "Torc-Pac" OBI press equipped with "Clearelease" mechanism for quickly unsticking the press. Unit at right is a TransferRobot built by Robodyne. The unit is used in this application to pick the stamped part out of the die and deposit it in the storage chute. TransferRobot can be programmed and modified to do a variety of part handling operations.

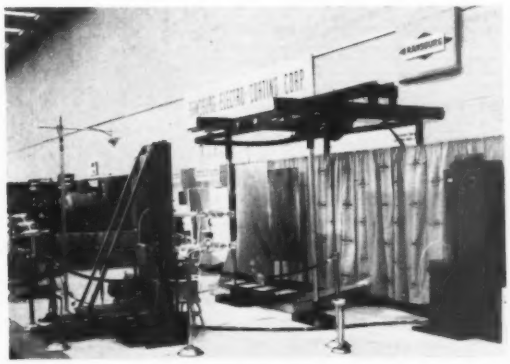




The XV '61, McLouth Steel's "vehicle of tomorrow," relies heavily on stainless steel for exterior paneling and many interior components. The vehicle is designed for conventional highway traveling as well as the automatic monorail systems that are predicted by many to be the transportation system of the future.



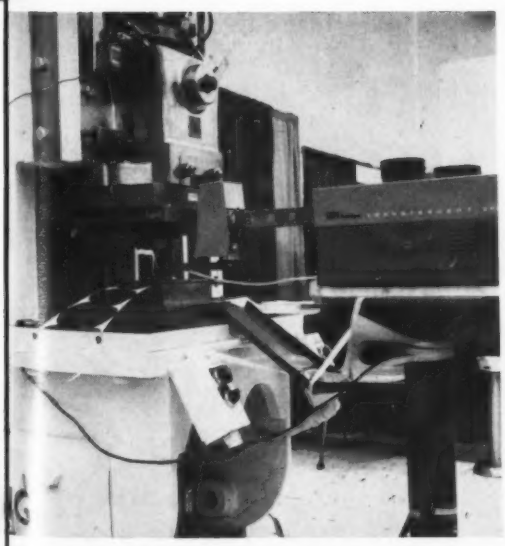
Feature of H. G. Fischer & Co. booth was a new electrostatic airless spray gun. The compact, portable unit is said to virtually eliminate overspray and bounce-back.



Demonstration of electrostatic moving bells highlighted Ransburg Electro-Coating Corp.'s display at the show.

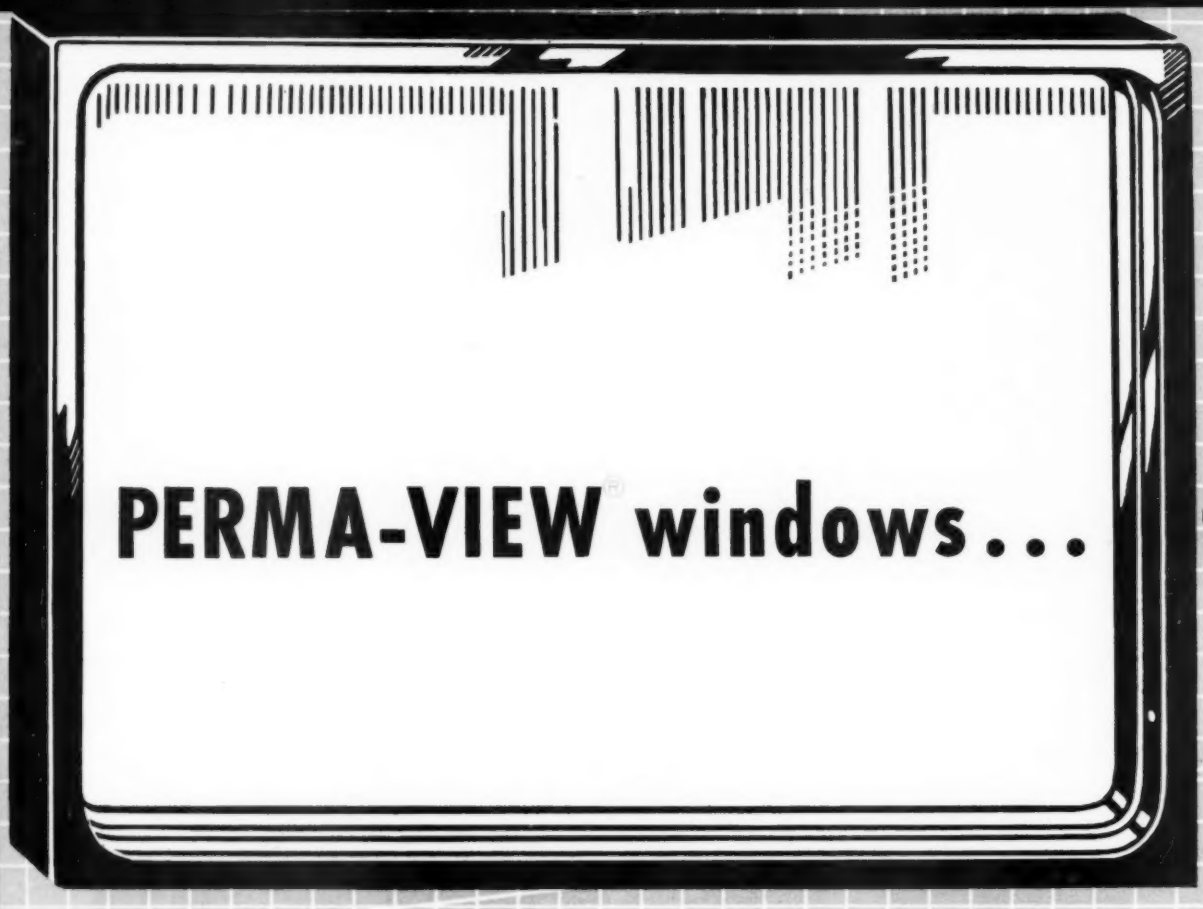
(Right) — Earl Sullivan, Chicago sales manager for Binks Mfg. Co., demonstrates use of the firm's new Dispo Cloth for spray booths. Overspray is deposited on the cloth, as opposed to using a water curtain. As the cloth becomes loaded, a switch is automatically activated to advance a new section of clean cloth. A Dispo Booth requires no pumps, piping, water or sewer connections. Approximately two quarts of paint overspray are trapped on each sq yd of disposable cloth.





(Right) — Youngstown Steel booth featured a "second-story" information center.

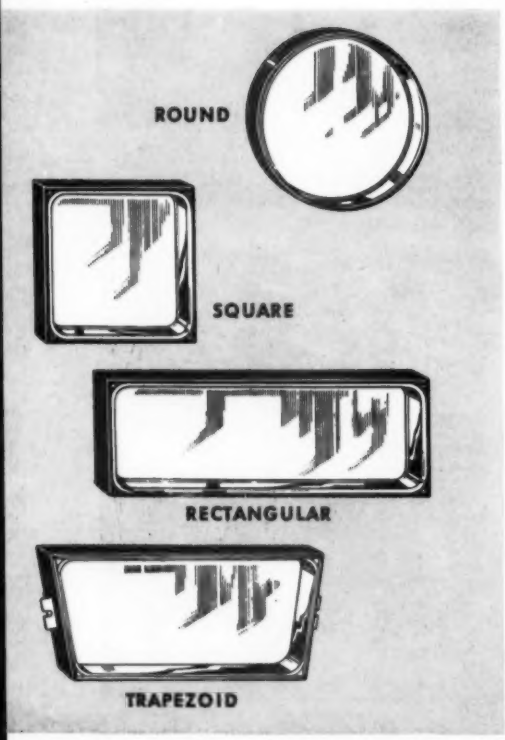




PERMA-VIEW windows... from

*3275% sales increase in 9 years proves Perma-View's wide acceptance.

The universally accepted PERMA-VIEW oven windows



This scientifically designed window, now used in gas and electric ranges produced by leading manufacturers throughout the United States, Canada, and many foreign countries, has now found other practical and useful applications.

PERMA-VIEW windows are now being used for such varied applications as pizza ovens, walk-in coolers, bakery tunnel ovens, commercial roast ovens, and laboratory ovens.

These varied and demanding applications for which PERMA-VIEW windows are being used help to show the quality and durability of this product. The strong steel enclosed, double pane PERMA-VIEW window incorporates the finest quality heat resisting glass. It is mechanically sealed to prevent infiltration of vapors and to eliminate "fogging." Any shape, any size, any thickness can be manufactured to meet your engineering requirements.

Mr. John R. Kauffman, President, "Speedster" Inc., Denver, Colorado, states, "The 'Speedster' ovens are doing an outstanding job in the food service-restaurant equipment field. They are widely used for pizza up to 650 degrees Fahrenheit, as well as normal baking operations up to 550 degrees. Mills Products has an outstanding line. Their products are good, and we are pleased with their service, quality, and design . . . they stand out far better than the manufacturer guarantees."

*3275% SALES INCREAS



Photo courtesy "Speedster" Inc., Denver, Colorado. This "Speedster" baking oven is widely used throughout the restaurant field for pizza and other baking operations.

n pizza ovens to laboratory ovens

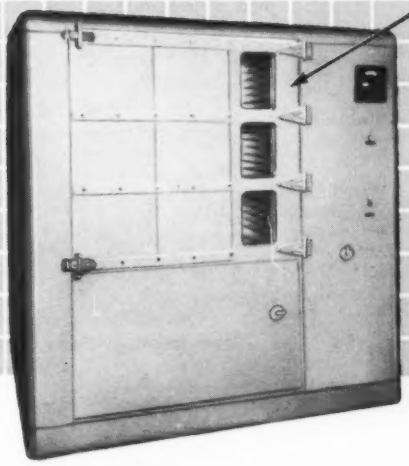


Photo courtesy Despatch Oven Company, Minneapolis, Minnesota. This is a Despatch Saf-T-Bilt laboratory oven, incorporating three PERMA-VIEW windows, precision engineered and manufactured to give exact temperature uniformity and hazard-protection.

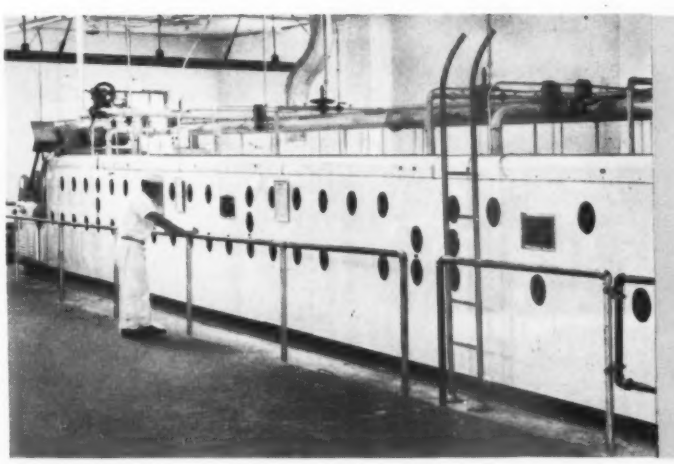


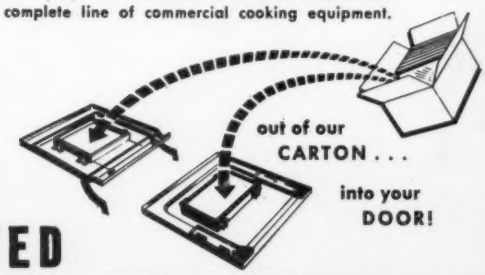
Photo courtesy Baker Perkins Inc., Saginaw, Michigan. This photo shows two PERMA-VIEW inspection windows in the operating side of a Baker Perkins Tunnel Oven installed in a commercial bakery.



Photo courtesy Vulcan-Hart Corp., Louisville, Kentucky. This is one of the Vulcan-Hart electric bake and roast ovens. Part of a complete line of commercial cooking equipment.

THIS IS A GENUINE CLEAR VISION PERMA-VIEW PATENTED NON-FOG WINDOW





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23rd PEI Forum stresses "advanced porcelain enameling"

one-coat, direct-on porcelain enameling again holds spotlight



MPM PHOTOS

Assigned the topic, "Improved Quality Through Testing and Controls," were (from left to right, front to rear) H. J. Smith, Pemco; J. C. Richmond, National Bureau of Standards; L. C. Farrow, Whirlpool, session chairman; F. W. Nelson, A. O. Smith; C. Strobach, Rheem; P. W. Butters, General Electric; L. R. Erwin, Day & Night; B. W. King, consultant; R. S. Thompson, PEI; and B. O. Austin, Westinghouse.

AN MPM STAFF REPORT

"ADVANCED PORCELAIN ENAMELING," with the emphasis on one-coat, direct-on systems and materials, occupied approximately 230 representatives of the porcelain enamel industry at the recent Porcelain Enamel Institute Shop Practice Forum.

The 23rd Forum, held November 1-3 at Ohio State University, Columbus, was built around 30 papers presented in four fast-moving sessions. As at last year's meeting, the subject of one-coat, direct-on porcelain enameling received a major share of attention. About half of the speakers dealt with the topic.

Realizing that two-coat processing is far from being obsolete, the Forum committee also scheduled papers concerned with improvements and new concepts in conventional enameling.

One high spot of the three-day meeting was the presentation of the second "Notable Lecture," a series inaugurated at last year's Urbana, Ill., Forum. Dr. J. J. Canfield, enameling consultant, research and technology, Armco Steel Corp., gave the lecture on "Pickling, Etching and Adherence of Porcelain Enamel." He discussed various pickling and etching materials and their effects on metals. An excellent series of slides was used to compare metal surfaces etched by various techniques and show the subsequent strengths of the porcelain enamel bond. Dr. Canfield concluded by observing that the use of one-coat, direct-on porcelain enameling would expand because of its superiority in certain applications. He cautioned, however, that the rate of adoption of one-coat systems depends to a great extent on lowering pickling and etching costs.



Panel on "Processing Methods, Materials and Equipment" consisted of (front row, from left) J. E. Cox, O. Hommel, session chairman; V. R. Luster, Ferro; W. D. Turner, Porcelain Metals; J. Ade, Sunbeam Equipment; (back row) R. Delott, Chicago Vitreous; G. E. Zabel, DeVilbiss; and W. E. Pierce, PEI.

Progress in materials

In a session organized to explore the general subject of "base metals and fabrication," speakers from steel companies which offer "zero-carbon" enameling stock for one-coat, direct-on work, discussed the properties and uses of their materials.

C. W. Beattie of Armco, discussing "critical grain growth" in "zero-carbon" steels, noted that the combination of extremely low carbon content in these



"Direct-on Cover Coat Enameling" was the subject for (front row, from left) H. C. Wilson, Vitreous Steel Products, session chairman; H. Afflerbach, Ingram-Richardson; R. D. Forth, Roper; J. C. Swartz, Westinghouse; (back row) F. Bailey, A. O. Smith; G. Miller, Ferro (delivered J. R. McCord's paper); L. M. Bernick, Inland Steel; M. DeJarnett, Caloric; and T. L. Stalter, Pemco.

materials, and critical strain caused by normal enameling practices, produces a coarse grain structure and resulting loss in strength. However, the excellent enameling properties and drawability of the almost completely decarburized metal should offset some disadvantages resulting from lower strength levels, he said.

Concluding, Beattie reported: ". . . investigations have revealed possibilities that the strength level of enameled parts made from special low-carbon materials may be increased."

A paper prepared by R. M. Willison and E. H. Mayer, Bethlehem Steel Co., and presented by Willison, investigated the drawing properties of "zero-carbon" stock, particularly the firm's Bethnamel.

In spite of the fact that the "zero-carbon" stock has better drawing properties than conventional enameling stock and cold rolled steel, the paper reported, some difficulty was encountered with vertical corner splitting on deep-drawn parts. Company engineers investigated the situation and determined that the splitting was caused by internal oxidation. Further tests revealed that reducing the moisture content in the decarburizing atmosphere substantially reduced the tendency for corner splitting. Now, the authors concluded, the splitting problem has been virtually eliminated.

M. B. Gibbs, Inland Steel, reported that his firm is now producing a "zero-carbon" steel designated "INamel." The stock is available in coil or cut lengths. Representatives from Bethlehem, Armco and U. S. Steel reported continuing improvement of their companies' "zero-carbon" stock.

Direct-on experience

The final session of the Forum was devoted to eight papers dealing with direct-on cover coating practices. R. D. Forth, Roper, detailed his firm's program on range side panels *(this operation was fully described in an MPM feature in the November 1961 issue.)*

Pemco's T. L. Stalter described "An Accelerated Pickle Process for Cover Coat Direct-on Steel," a program under study at Pemco. Stalter said that early results of the study indicate that pickling time with sulphuric acid can be cut to one-sixth of present cycles by the addition of sodium or potassium nitrates as accelerators in concentrations of one ounce per gallon.

Although both sodium nitrate and potassium nitrate were used successfully in the investigation, Stalter pointed out that sodium nitrate may be preferred because of its lower cost. He recommends that only "zero-carbon" steels be used for direct-to-steel enameling using this process. Regular vitreous stock and cold-rolled steel may be processed for conventional two-coat enameling.

Regarding pickle line equipment for this process, Stalter recommended that it be fabricated of 316 stainless steel because of maximum corrosion resistance among the metals studied, but added that acid-proof brick is also highly desirable where practical.

An investigation of five frits and 12 oxides used to produce colored enamels for direct-on application to steel was reported on by H. W. Afflerbach and R. E. Creviston of Ingram-Richardson. According to the authors, results of the investigation showed that "frits compatible to the direct-on process produced essentially satisfactory colored cover coats for direct-on application when oxides normally compatible to the specific frits were used."



"Base Metals and Fabrication" was discussed by (from left) M. B. Gibbs, Inland Steel; E. H. Mayer, Bethlehem Steel; C. W. Beattie, Armco Steel; R. M. Willison, Bethlehem; D. A. Toland, U. S. Steel; R. L. Myers, Armco; and R. S. Dale, Ervite Corp., session chairman.

Nickel oxide pre-coating

Production experience at A. O. Smith with a nickel oxide pre-coating in one-coat enameling was explained in a presentation developed by F. W. Nelson and J. D. Sullivan. The technique has been used to coat approximately a half million tons of steel during the past four years, including approximately two million water heaters or 36 million sq ft of porcelain enameled surface. The paper was presented by Floyd Bailey of A. O. Smith.

According to the authors, the process employs a special catalytic grade of nickel oxide which is milled with barium metaphosphate and suspended in water. The slip is sprayed onto cleaned steel in a very thin layer prior to spraying the cover coat. The nickel oxide is reported to eliminate fishscaling and markedly improve adherence, and the barium metaphosphate addition is said to control boiling and copperheading.

L. M. Bernick, Inland Steel, reported on an investigation to determine the relationships between pickling, nickel flashing and enamel adherence. Two pickling processes were used in the study: normal sulphuric acid system and an oxidizing-type, ferric sulphate-sulphuric acid system.

Among the major conclusions resulting from the study are the following: the amount of surface removed during pickling is the major factor affecting the enamel adherence of direct-on enamels; the effect of the weight loss on enamel adherence appears to be irrespective of the type of pickling system used; in addition to affecting the enamel adherence, the weight loss during pickling also affects the amount of nickel deposited during nickel flashing — the greater the amount of surface removed during pickling, the greater the amount of nickel deposited in a given time; one of the major factors affecting the pickling rate of steels in sulphuric acid solutions is the ferrous sulphate content — when pickling in sulphuric acid solutions, it appears that the maximum content of ferrous sulphate should be six percent, as above this amount pickling rate is decreased to a point where unsatisfactory enamel adherence might be obtained.

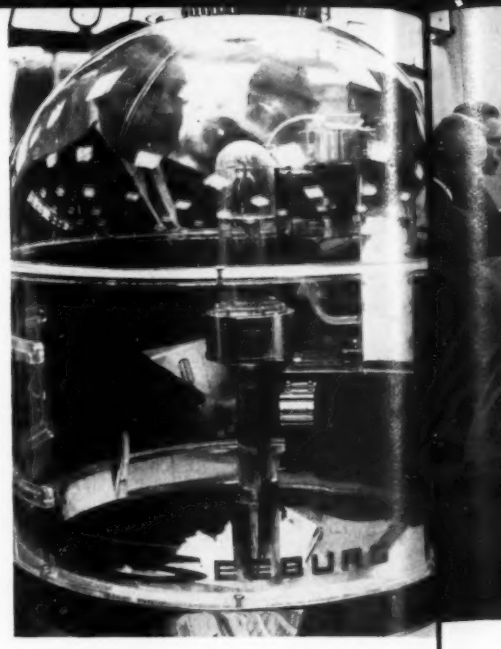
Shop experience with one-coat, direct-on was reported by John C. Swartz, Westinghouse. Swartz explained that the process in current use at the Columbus plant is essentially the same as was described at the 1960 Forum. He detailed some of the difficulties encountered and measures employed to correct them. "It must be pointed out that finding the answers to some of the DOFP problems has been tediously slow at times," he concluded, "but with the help of all sections, answers have been found."

Caloric's Melbourne DeJarnett pre-

TO PAGE 32 →



(Left) — Standard Change Makers President Jack Lanagan demonstrates how coin tubes are removed from company's new electric "Change-Center." The unit changes 50¢, 25¢, 10¢ and even two 5¢ coins, and the 50-cent section can be set by the owner, without use of tools, to return any one of three different coin combinations. The Change-Center is solenoid driven and holds an average of $250 to $310 in change, providing 1200 to 1300 vends.



(Right) — Glass-enclosed working model of Seeburg icemaker was one focal point of Seeburg exhibit. The icemaker is used in the firm's cold drink dispensers.

AN MPM STAFF REPORT

Automatic merchandising displays 75

convention and exhibit draw 10,500 vending executives to Chicago

THE FIRST KNOWN vending device was invented in 219 B.C. by Hero Cstebus, a Grecian high priest. The machine dispensed holy water at the drop of a drachma. The "industry" made little further progress until 1886, when Frederick C. Lynde received the first American vending machine patent for a postcard-cigarette vendor.

Seventy-five years later, on October 28-31 of this year, the automatic merchandising industry demonstrated its growth with a 75th anniversary convention and exhibit and the first International Vending Symposium at Chicago's McCormick Place and the Conrad-Hilton Hotel.

To the 10,500 American vending executives and 400 of their counterparts from overseas who attended the four-day affair, there was little question of *what* products can be handled by automatic merchandising equipment. It was more a matter of what products are *not* being offered in vending machines. Complete hot meals, milk shakes, ice cubes, boxed candy, cigarettes, groceries, insurance policies, and money orders are just a few of the items sold through the automatic vending machines displayed at McCormick Place.

The show, sponsored by the National Automatic Merchandising Association, was billed as "the largest display of vending equipment ever assembled under one roof." In addition to the exhibit, the first three days of the convention were devoted to American vending, with discussion panels and industry meetings at McCormick Place and the Conrad-Hilton. The overseas automatic merchandising executives participated in the First International Vending Symposium devoted to vending methods throughout the world. "Tea Vending in England," "Beer Vending in Jamaica," and "Automatic Public Restaurants in Holland" were some of the subjects explored.

According to Thomas B. Donahue, president of NAMA and executive vice president of Universal Match Corp., the purpose of the international meeting is threefold: "First, to exchange ideas and know-how about vending as a marketing method with vending executives from foreign countries; second, to create further export markets for American vending machine manufacturers; and third, to better acquaint businessmen of other countries with the American economic and distribution system."

Donahue, predicting a "tremendous growth" in vending food services for

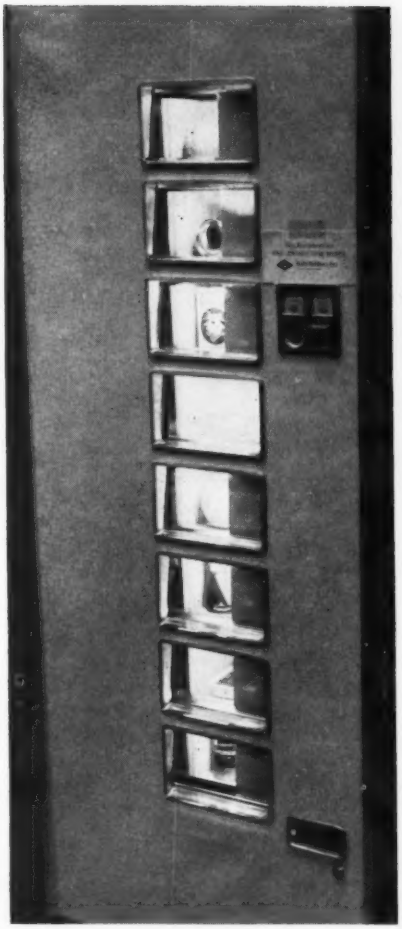
MPM PHOTOS



A Thermowave Corp. free-standing oven is used in conjunction with equipment dispensing frozen or refrigerated food. Model is pictured placing "ready-to-serve" meal in oven. Food is cooked to the desired serving temperature in a matter of seconds. Heat-producing waves penetrate below the surface of the food so that the food is cooked uniformly throughout.



(Left) — New automatic popcorn machine built by H. W. Tuttle & Co. for Auto-Pop Mfg. Co., Inc., has a capacity of 400 24-oz cups. The unit has an eight-second delivery cycle and a hopper capacity of 35 lbs of popcorn kernels.



(Right) — Pre-production model of Rudd-Melikian "Cold Cafe." The unit dispenses refrigerated items ranging in price from 5¢ to $1.25 on a "first-in first-out" basis. Depending on the size of compartments used, 56 to 240 items may be vended, and loaded front or rear.

75 years of progress

hospitals, factories, offices and schools, said the use of the equipment in these areas will increase by a possible 30 percent in 1962. While practically no such facilities existed five years ago, he said, an estimated 3000 vending cafeterias are now in operation.

He also forecast a continuing trend toward mergers of vending companies, as another basis for further growth. "As the capabilities of automatic vending increased to the point where it could satisfy the food service requirements of plants, offices and institutions, vending companies naturally had to utilize new equipment, new methods and new sources of financing," he said. "The mergers are one way of providing the know-how, the capital and the personnel."

In 1960 the dollar volume of items vended reached $2.5 billion, and the number of vending machines in use approached four million. Many of these machines and new models for 1962 were exhibited at McCormick Place. Among the attention-getting exhibits at the show, the largest was one set up by the Vendo Co., which incorporated 7500 sq ft of floor space. A total of 75 individual pieces of vending equipment were shown.



(Left) — A new water softener designed expressly for use in hot and cold drink machines is demonstrated by Russ Forsman, chief engineer of Payne Products Co., Ann Arbor, Mich. Forsman is replacing nylon bag containing softening minerals. The unit can be mounted inside or outside the vending machine's cabinet, and can be serviced without tools.



(Right) — One feature of massive Vendo exhibit was new Automatic Rack Merchandiser. The unit combines the popular sales technique of displaying small retail items on racks or pegs with automatic merchandising. The Rack Merchandiser sells 110 articles from coin-operated dispensing rods which are controlled from a central panel. The equipment makes change and sells at prices from 5¢ to $1, in 5¢ increments.

installation flexibility featured in two new models for 1962

A new Whirlpool icemaker



Icemaker mounted on inner liner of freezer compartment.

AN MPM DESIGN FEATURE

WHIRLPOOL WILL MARKET two new ice cube makers in 1962. Designed for installation in refrigerators with either standard or thin-wall construction, the units feature a new water valve which can be located anywhere in the cabinet of the refrigerator outside the freezing compartment.

The valve is connected to the ice making unit by copper or plastic tubing, depending on the manufacturer's preferences. Thus, the location of the valve and the ice making unit can be determined on the basis of individual manufacturers' requirements.

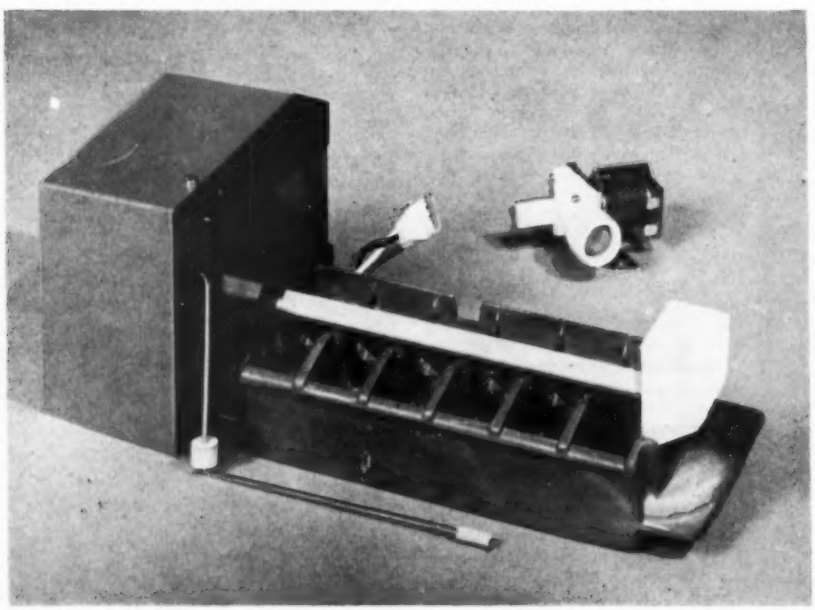
One model is designed with a flat bottom mold for mounting on a supporting refrigerated shelf. The other model, which is said to be entirely new for 1962, has a finned shelf as part of the mold. It is suitable for application in forced air or air-cooled freezing areas and mounts with two screws to the inner liner of the freezer compartment. Integral fins of the new icemaker are said to provide excellent heat transfer properties.

Other new features of the new units include a bimetal thermostat, replacing a gas-filled thermostat used in previous models. The thermostat retains a fixed setting of 18 F, and the thermal contact end extends into the first cube section of the ice mold and acts as a "last point to freeze" control surface. The thermostat is also smaller than the previous model used.

Also, snap-acting enclosed switches replace the open leaf types formerly used. The switches provide better control of operation and eliminate dirty contacts, the company says. The switches are cam-operated, single-pole, double-throw type.

Electrical connection with the refrigeration unit's wiring harness has been simplified by replacing three individual connectors with a single three-pronged receptical.

Whirlpool's new ice cube maker uses a six-compartment, aluminum die cast ice mold. Stainless steel stop arm in foreground "detects" full ice storage tray and stops operation of the icemaker until the cube supply is diminished. Remote water valve is in background.



Retained as standard equipment on the 1962 Whirlpool icemakers is a completely enclosed two-pole shaded-pole motor. The motor, which drives a reducing gear train, operates at about 1 rpm. Its output shaft is connected with an ejector blade on one end and with controlling cams on the opposite end.

Three different cam actions are activated on a single nylon cam hub by action of the ouput shaft of the motor. One cam drives the stop arm, another activates the snap switches for the combination of functions, and the third regulates the water valve.

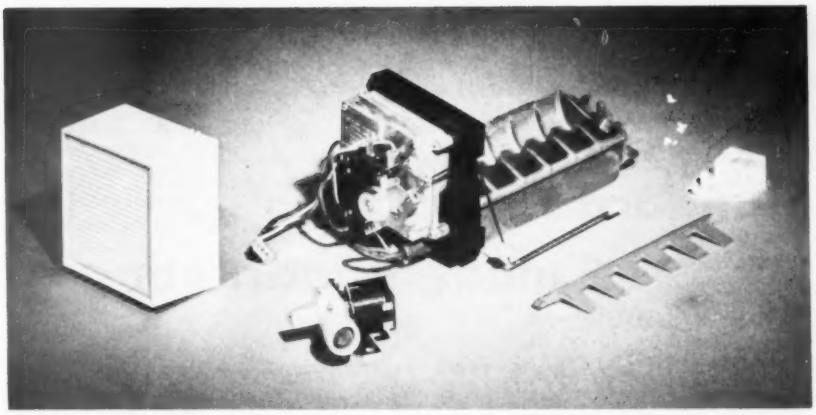
The "stop arm" referred to is a stainless steel rod which is lifted to a raised position during each freezing and ejection cycle and released at the end of the cycle. The arm in its upright position prevents further operation of the mechanism unless allowed to drop by cam action. Whenever the ice storage tray is completely filled, the stop arm is supported in an "up" position which stops

the mechanism until the supply of ice cubes is diminished. Two rubber grommets are located on the stop arm. The first protects the user's arm from being scratched while removing cubes. The second grommet can be used as a stop for the mechanism by sliding the grommet to the upper end of the arm and wedging the arm in the "up" position. The stop arm action engages a nylon lever which acts as a master switch for activating and stopping the mechanism.

When the solenoid valve is activated, water passes through a strainer and flows into the ice mold. A water flow regulator maintains proper proportions of water quantity to time and is based on a normal 20-lb or more water pressure.

The ice mold is a six-compartment aluminum die casting with semicircular chambers. Water flows from the rear end through openings in each partition until all cavities are filled.

An extruded aluminum ejector blade, which consists of a rod with six machined blades extending from the central shaft to the water inlet bracket, turns in nylon bearings in front and rear. Each of the blades sweeps a single compartment of the ice mold. The ejected ice remains on top of the blades where it freezes dry before being dropped into the storage tray as the next cycle begins.

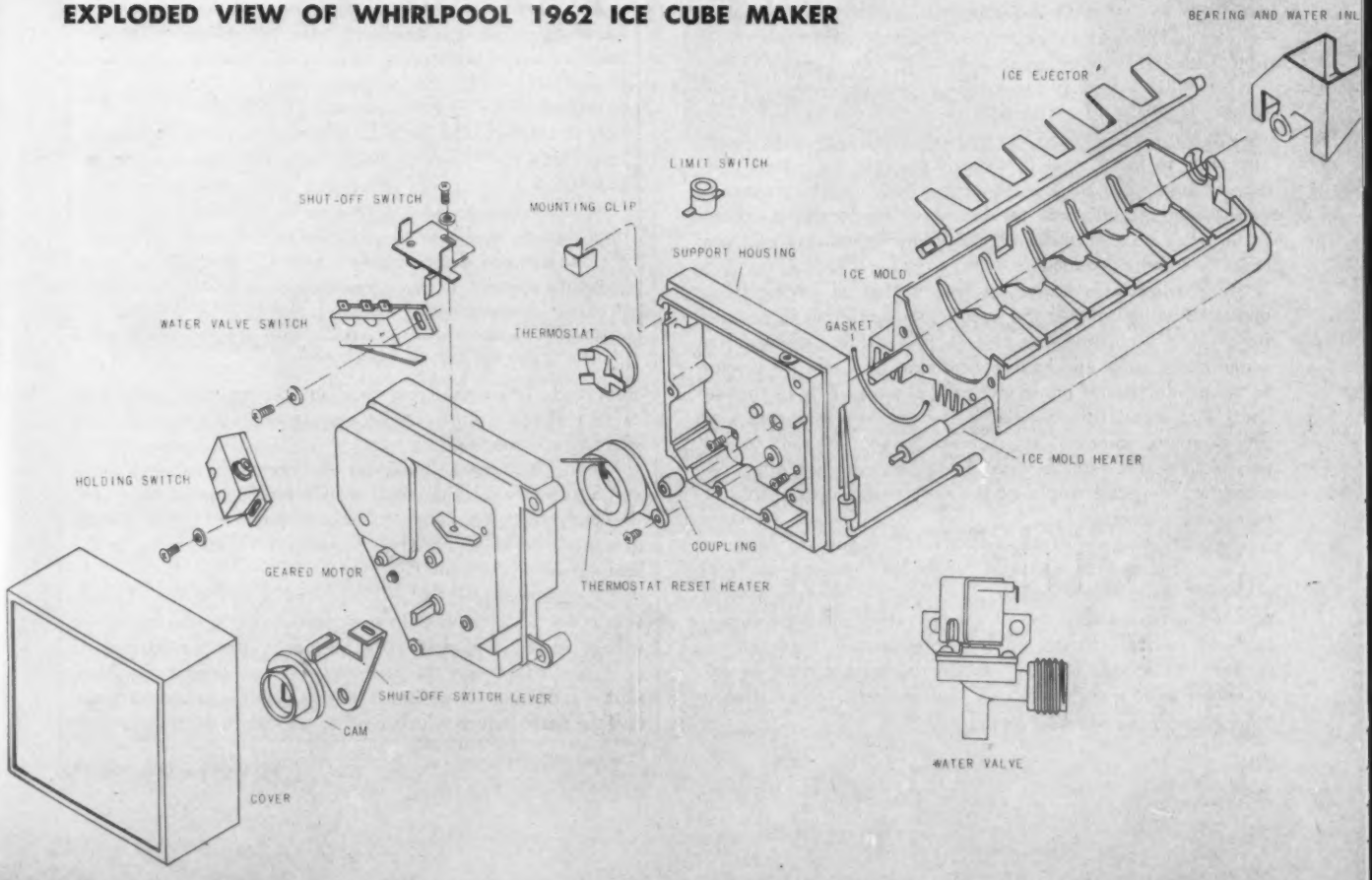


Four of the icemaker's components (left to right) include a plastic front cover; remote water valve, which can be located anywhere in the cabinet outside the freezing compartment; extruded aluminum ejector with six machined blades; and a combination water inlet, ejector bearing. Visible components attached to the icemaker itself include thermostat reset heater, water valve switch and three-pronged receptacle. These parts are mounted on enclosed two-pole, shaded-pole motor.

Located in a special groove beneath either the refrigerated shelf or below the integral-finned model is a ceramic-embedded, aluminum-sheathed line voltage resistance heater. In thermal contact with the mold, the heater is activated at the end of the freezing cycle to allow the ice pieces to warm sufficiently to be removed from the mold.

Should a malfunction or obstruction cause the heater to remain energized for an abnormal period of time, the limit switch opens and de-energizes all electrical components. _____MPM

EXPLODED VIEW OF WHIRLPOOL 1962 ICE CUBE MAKER



STANDARDIZATION SERIES

Standardization vs. a modern marketing concept

BY *Donald M. Strathearn* • GENERAL MANAGER, APPLIANCE & AUTOMOTIVE DIV., CONTROLS CO. OF AMERICA

APPLIANCES MUST BE SOLD. Appliance manufacturers must not only compete among themselves for the consumer dollar, but must be aware of the currents of cross-competition in the market place. Complicating the consumer's buying decisions today is not merely the question of which brand to buy, but, instead, whether to postpone buying the machine in favor of getting a new fur coat, taking a vacation trip or some other purpose that will consume the purchasing power.

Based on the premise — FEATURES sell appliances — in the area of design and development of control systems and control devices for appliances, the philosophy of standardization is at odds with the dynamics of modern marketing. Controls are one of the most important variables in stimulating appliance sales. Standardization of the controls would therefore eliminate the features on the appliance that make them attractive to the customer.

Standardization as related to improved reliability and reduction of service calls is another matter. Standardization definitely has a role in the appliance industry, but certainly is not, and should never be, the prime consideration in a progressive marketing philosophy.

Internal mechanical design of appliances, now developed to a high point of reliability, rarely can be considered a merchandising feature. The markets expect, and are rarely surprised to know, that this year's product is "better." Design changes are of interest primarily to engineering and production specialists in the industry, the servicing organizations and, to a mild degree, the home economists who use, teach or sell the products.

Standardization's important task is that of paring labor and production costs to the irreducible minimum in producing an item according to a given specification. This requires some imagination and engineering skill as it can be applied to the production of many mechanical parts. It is in this respect that standardization is of the greatest importance to the appliance industry and should be kept in that proper perspective. Were standardization to become the major consideration — price would be the only variable in selling or marketing planning.

The marketing approach of Controls Company of America in the appliance field is that of *"evolution" rather than "revolution"** in controls design. The concept involves several planned, progressive stages of change rather than one sweeping and radical change which the consumer may not be prepared to accept. In other words, the market must be approached with a suggestion of improvement rather than a command. These changes, involving styling and specialized control of the equipment, become the key features of more effective merchandising.

Product features sell laundry equipment. This is not new, and a page from the book of a successful manufacturer well illustrates the point. To "evolve" a broad selection of models to apply to a wide variety of customer requirements is the best answer.

A long range plan to "roll" the styling of the line of products is necessary so that in the current year's offerings there will be included models with the most sophisticated type of models available for the more adventurous customer. Also, some fundamentally designed models reminiscent of last year and the year before which tend to appeal to customers of a

*See Finish Line editorial on page 7.

EDITOR'S NOTE: Mr. Strathearn presents a fresh and somewhat different view on the subject of standardization. He is more conservative than some of our contributors on its possibilities. As will be evident, his remarks refer largely to appliance controls and their merchandising possibilities. We are in accord with the author when he says: "Standardization definitely has a role in the appliance industry, but certainly is not, and never should be, the prime consideration in a progressive marketing philosophy."

This latter statement raises a point which we anticipated even before the current series was launched. To clarify our position on this matter, every article in the series has included MPM's standardization series policy:

"It will not be our plan to use information which would tend to stifle improvement of products or logical model changes which offer the end product purchaser added use value."

Mr. Strathearn echoes our feelings when he mentions standardization in connection with "improved reliability and reduction of service calls" and "paring labor and production costs." These points are certainly most important benefits of standardization programs.

It is obvious that the author is not accepting standardization as a policy which should be followed without reservation. We are not suggesting that anyone should. "Standardization" has a great variety of definitions and applications, and it is the purpose of this series to probe the subject and determine how and where it can be successfully applied in the appliance and fabricated metal products manufacturing industry.

more conservative mind are required. Proof of the success of this marketing strategy is obvious when one considers who's who in the marketplace.

It is not intended to imply that the automatic washer equipped with the most elaborate control system will sell best. As in the automobile industry, it might be well to have similar features available in all or more segments of the product line. As an example, the automobile industry makes available automatic transmissions, power windows and even air conditioning in all models. The error of not having air conditioning in compacts in 1961 has been corrected in '62.

It was said at a recent laundry conference that programming automatics are as different from a regular automatic as a regular automatic is from a wringer washer. This being the case, three or four programs in the low end of the line and six or eight programs in the middle of the line might very well complement the twelve or fourteen programs available in the top of the line washers. This approach could stimulate all segments of the market and give the middle and lower end of the line some stature rather than the connotation of a price — and still lower price — with the attendant short profit margins.

It is unlikely that a narrow concept of standardization could gain widespread acceptance. *As a part of a well-planned program to improve reliability and reduce operating costs, standardization can serve its best cause.*

The appliance industry is dedicated to develop new ideas and products which result in significant improvements in performance and service. Because of the challenge of progress, an aggressive marketing approach based on appliance features has been highly successful in individual companies. From the research and development work of the engineers of the home laundry industry will come many new, exciting developments for the marketplace and consumers of the future.

MPM STANDARDIZATION SERIES POLICY: ***It will not be our plan to use information which would tend to stifle improvement of products or logical model changes which offer the end product purchaser added use value.***



Donald M. Strathearn, vice president of Controls Company of America and general manager of its Appliance and Automotive Division, has a background of nearly 25 years of engineering and management experience in the U. S. appliance industry.

Joining Controls Company in 1955 as vice president and director of engineering for the Appliance and Automotive Division, he was named director of sales for the division three years later, and became general manager in 1960.

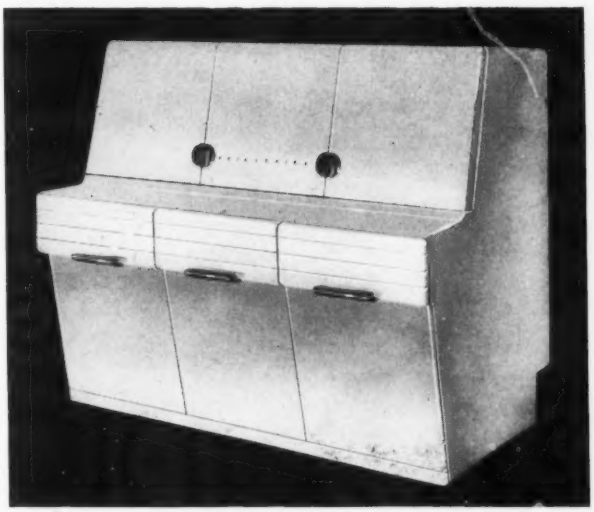
Major positions he held in the appliance industry prior to joining Controls Company include: chief engineer of laundry equipment at Bendix Home Appliances, and Norge Division, Borg-Warner Corporation; director of engineering of laundry equipment and appliances for Bendix Home Appliances Division, AVCO Manufacturing Corporation; and director of engineering at Crosley and Bendix Home Appliances Division, AVCO Manufacturing, involving supervision of all engineering on refrigeration, ranges, laundry, radio and television equipment.

Evolution or revolution . . . ? Draw your own conclusions

In the August 1944 issue of this publication, J. Gordon Lippincott, well-known designer, had this to say:

"There will be greater advances in appliances in the first few years after the war than in the previous twenty years. There are many sound reasons for this forecast. First and foremost — the manufacturers are beginning to realize that the average American woman does not have a maid and that she uses her own appliances and that she is gradually insisting on products that are functionally well designed and styled. Too often in the past products for feminine use were designed by engineers without thought to consumer needs. We know that the maidless kitchen is here and that therefore the trend will be toward appliances designed for easier use and cleaning and with more automatic controls.

"The American woman was just becoming used to automatic controls in electric ranges before the war, and certainly after the war all better models will have devices which will enable the housewife to cook her entire meal during the afternoon while she is out playing bridge.



This refrigerator designed by Dohner & Lippincott provides convenient drawers at waist level, shelf space at work table height, and easily accessible shelves at eye level. Cool, dry storage space is provided in the bottom of the cabinet.

"One of the greatest problems facing industry today is to accurately forecast what the American woman wants in the products she buys. In the recent past, ranges — for example — have been dolled up with chrome and fancy molded plastic handles with gadgets and lights to help aid sales appeal. (*Someone must have made a record of this, as many times as we have seen it repeated.*) Most of these additions did not improve the function of cooking and, while many American women were fooled into buying a stove once, by means of gadgets with eye appeal, they will be more critical the second time."

In the 1944 article, Lippincott asks for a small oven, suggests the proper oven location, and requests an exhaust fan in the range itself.

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→ FROM PAGE 25

sented a paper on his firm's experience with finishing architectural porcelain enamel panels in two colors — beige and yellow, with a semi-matt finish. After deciding on formulations for the two colors, trials were run with less than successful results. To improve the finishes, the formulations were adjusted to reduce the various refractory materials. This resulted in more fluid enamels with sufficient mattness to satisfy the customer. This adjustment also increased the firing range and widened the latitude of application thickness that would result in the same color and finish over the entire panel.

DeJarnett reported that other colors "show promise" for direct-on processing, but not all colors are ready for this type of application. He added: "Reduced cost of operation is most interesting, but also in architectural applications the increase in chip resistance, the ability to drill holes on the job, and the ability to perform minor alterations in the panel configuration is much more interesting to the contractors and customers."

McCord on new markets

Final speaker in the session dealing with direct-on cover coat experiences was J. R. McCord, Ferro, who was asked to speak on "Markets for One-Coat Porcelain Enameling."

"You may not agree with me," McCord said, "but to the extent of my ability to analyze this development (one-coat, direct-on), its major virtues may only be in reducing costs of porcelain enameling by the usual costs of ground coats (possibly offset by more metal preparation costs), and the saving of production costs of a two-fire system in favor of one-fire.

". . . I would much prefer to see the porcelain enamel industry move to lower-temperature, whether one-coat or two. Obviously, one-coat, low-temperature maturing systems are the real answer. I personally believe the industry's salvation and hope for expansion is more contingent on obtaining 1100 to 1200 F enamels than any other."

McCord noted that appliance manufacturers won't be able to make full use of "one-fire finishes" until the firing temperature is brought down to eliminate potential warpage of thin-shell refrigerators, air conditioners, dryers, etc.

Concluding, he said: "One-coat enamels are a step in the right direction, so let's continue the good work and move on to some equally necessary solutions."

Although a large portion of the papers presented at the Forum concerned one-coat, direct-on processing, other areas of the industry were not ignored. In a session devoted to "Processing Methods, Materials and Equipment," G. E. Zabel, DeVilbiss Co., delivered a talk on experimental work the company is doing with thermal cleaning of metal.



Dr. J. J. Canfield, Armco Steel (center), who delivered the second Notable Lecture, looks over his paper with PEI President J. C. Winget, Armco Steel, and C. J. Kleinhans, Porcelain Metals Corp., chairman of the 1961 Shop Practice Forum committee.

Depending on the configuration of the ware and the amount of cleaning necessary, the burn-off is accomplished at 500 to 600 F for approximately eight minutes. Radiant heat is preferred, but convection heating is necessary with some configurations. Following burn-off, Zabel said, the ware is washed with a hot detergent and given a hot water rinse to remove carbon smut and other materials. Advantages for the process were cited as the following: cost is lower than conventional spray degreasing; no toxic materials are necessary; there is a better chance of cleaning all areas than with spray pickling; and no recharging, sludge removal, or maintenance of heating equipment are required.

Glass-coated domestic water heaters also received a good deal of attention, with three papers presented on various phases of this subject. L. R. Erwin, Day & Night Mfg. Co., and C. Strobach, Rheem, reported on their companies' techniques of testing the water resistance of tank linings. These tests include both laboratory checks and field "patch tank" studies.

A paper developed by F. W. Nelson and W. E. Stearns, A. O. Smith, reported on "Enamel Requirements to Meet Environmental Extremes in Domestic Water Heaters." The authors pointed out that under ideal conditions, the maximum temperature reached in a water heater tank, because of temperature build-up which often occurs in the center flue type heaters, is in the vicinity of 190 F.

"However, in actual service," they pointed out, "much higher temperatures are encountered because of the loose, hard water scale blanket that builds up on the bottom head." In laboratory experiments, a slight deposit of sediment consisting of three parts of sand and one part of silica was added to the tank. After ten minutes of operation with the heater and thermostat set at 160 F, temperature of the bottom head reached 320 F. This temperature remained constant during the entire 60-minute heating period.

"When we apply the rule of thumb that glass corrosion doubles for every 20 F rise in temperature," the authors noted, "it is readily seen that a serious glass corrosion problem exists on the bottom head." Slides were shown depicting the effect of this high temperature on various enamels.

Concluding, the authors said: "The ceramic engineer should recognize the extreme environments encountered in domestic water heaters and must insist on high manufacturing quality standards to insure good product performance."

B. O. Austin explained and demonstrated his development, the Austin cell, which has important potential in the aero-space field. The cell consists of standard enameling iron coated on each side with porcelain enamel. Each side is partially coated with silver. When heat is applied to the cell, electric power is produced through a galvanic action. The principle was demonstrated by running a small electric motor from power produced by the cell.

Muffler progress

W. E. Pierce, PEI's manager of prod-

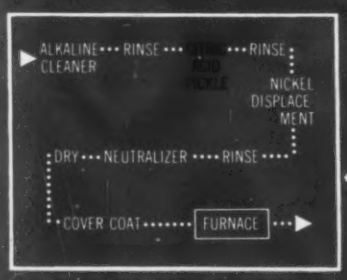
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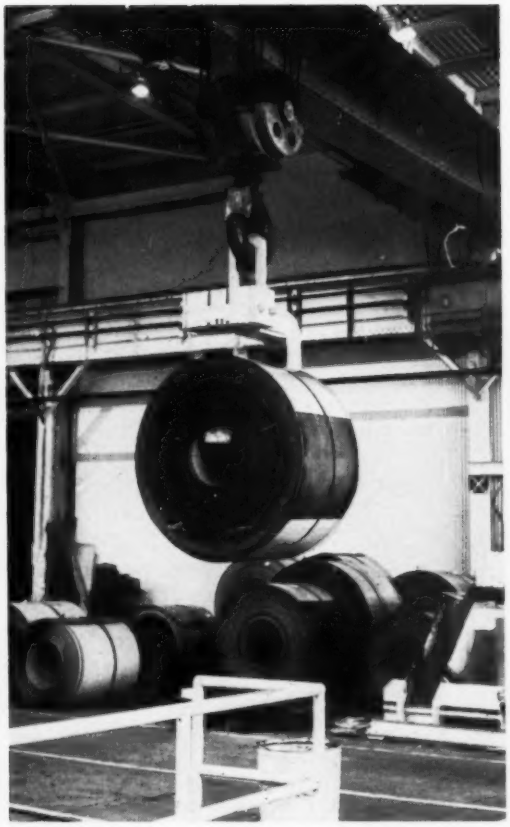
Circle No. 335 on Reader Service Card.

new 600-ft line teamed up with automated fabrication equipment to streamline steel roof decking production

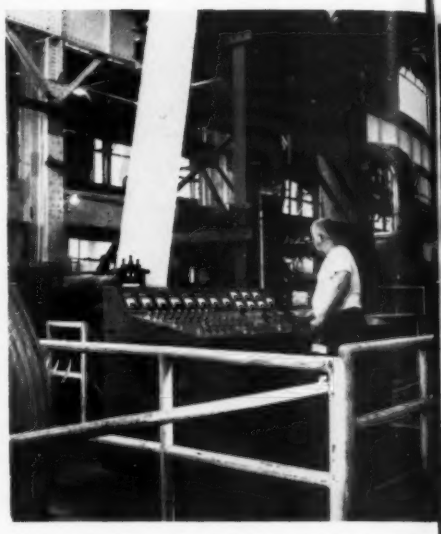
Coil coating a Wl



R. P. Raper (left), assistant general manager, Beech Bottom plant, and R. W. Oldham, general manager, examine finish on a Wheeling pre-painted coil.



One of three overhead cranes which serve the coating line and adjacent roll forming equipment. Painted coil is being transferred to the fabricating line.



Main control console at delivery end of coating line (above). Operator at this console has control over every operation in the system. Painted strip can be seen descending from accumulator i



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AN MPM STAFF FEATURE

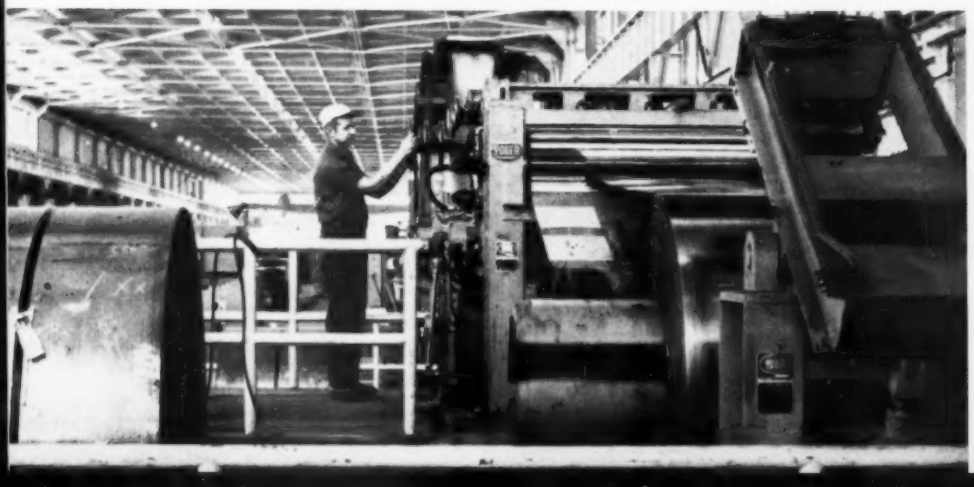
A COIL COATING LINE two football fields in length is in full operation at Wheeling Steel Corp.

The 600-ft line, utilized initially for painting steel used to make roof decking, is located at the company's Beech Bottom, W. Va. plant (a few miles north of Wheeling). It handles coils up to 30,000 lbs, in widths from 24 to 48 in. Paralleling the new coating equipment is a highly automated fabricating line that roll forms and shears the coated stock to the required lengths of roof decking.

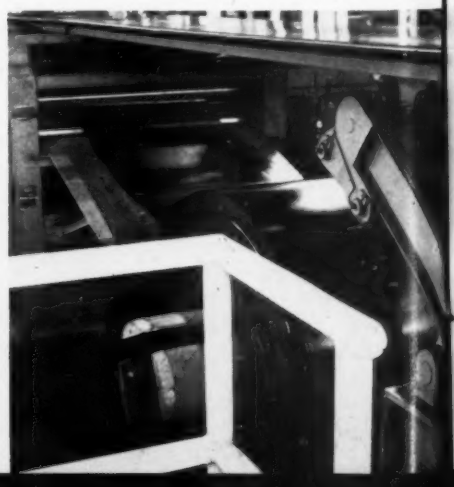
Since the coating line went into operation this year, its use has been confined to painting roof decking stock. With its current capacity of 10,000 tons per month, however, it seems logical that the equipment could also be utilized to produce pre-painted coils for outside users. Wheeling management feels that with minor modifications in the line, it could also be used for the production of vinyl-on-steel laminates and similar products.

L. C. Hollerbach, manager of the building material sales division of Wheel-

Entry end of line consists of two uncoilers, coil cars for loading, and a 17-roll, pull-through-type leveler. Operator is adjusting roller leveler tension. The use of two uncoilers allows preparation of the second coil before running out the trailing edge of the coil in process.



View from entry end control console platform shows two "pass lines" for the strip. Uncoiler shown uses lower pass line; pass line above serves first uncoiler. Stock from both coils is 22-gage, 36¾ in. wide.

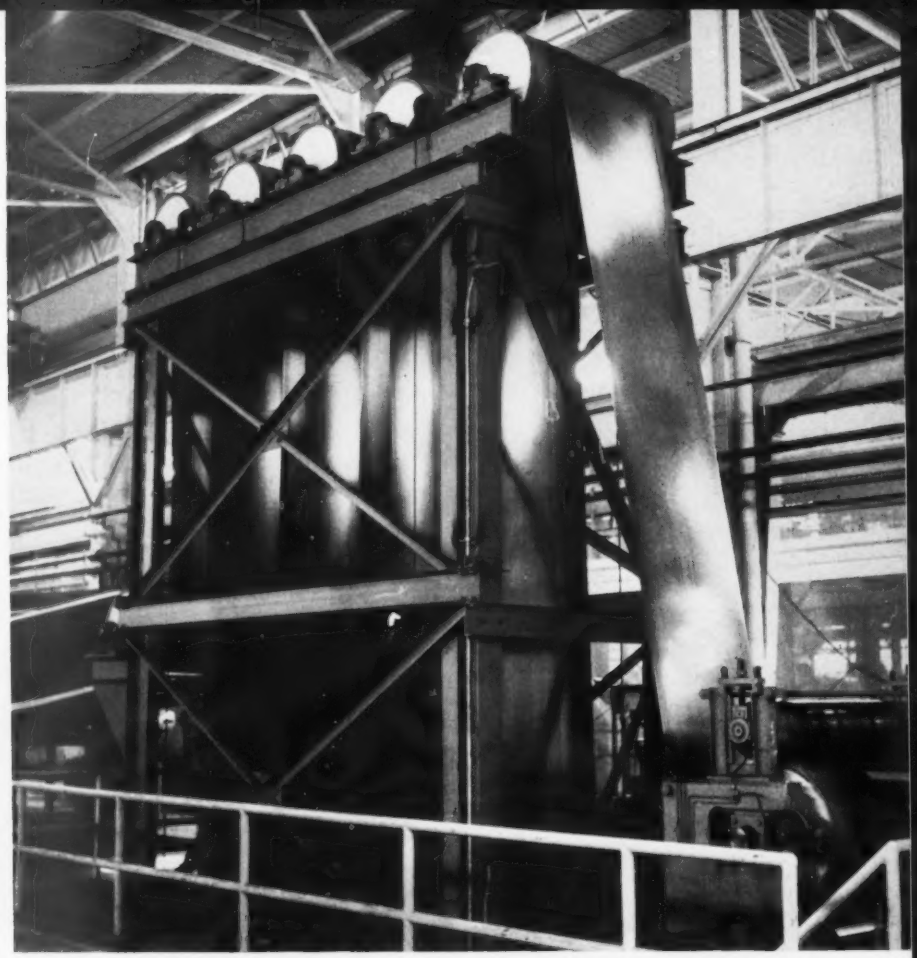


Both shea with lowe able the the for ing

at Wheeling Steel



background. Control console at entry end of line is shown above. Operations through cleaning and bonderizing can be controlled here. Telephone-loudspeaker system is being used to talk with operator at main control console.



Accumulator at entry end of line has five upper and four lower rolls. When splice between two coils is being made, lower rolls ascend to keep the balance of the line supplied with stock. Accumulator holds 200 ft. of stock and allows operators 1½ minutes to make the splice without shutting down the rest of the line.

ing Corrugating Co., a Wheeling Steel subsidiary, says the development of noncombustible vapor seals in recent years has had a positive influence on the use of steel roof decking because of favorable acceptance by insurance companies.

Used largely for industrial and commercial buildings and schools, the Wheeling decking is sold primarily through roofing contractors and structural steel fabricators throughout the country. The balance of sales are directly by Wheeling Corrugating Co.

Approximately 80 percent of the decking now sold by Wheeling is made of cold-rolled steel, with galvanized steel accounting for the rest. However, the use of galvanized is increasing, according to Hollerbach.

The decking is currently manufactured in widths of 24 in., as compared with 18-in. widths produced by the previous method of using spray-painted sheets which were individually formed on press brakes. The new continuous forming and shearing equipment allows production of the decking in "unlimited" lengths. The maximum that has been produced to date is 50 ft. Lengths of 22 ft, 6 in. were the maximum with the press brake technique.

In addition to the decking itself, Wheeling produces accessories such as ridge and valley plate, cant strips, saddles and sump plates.

Virtually every type of organic coating can be applied with the equipment. Alkyds, vinyls, alkyd-amines, acrylics, modified vinyls, epoxies, epoxy esters and phenolics can be successfully applied in film thicknesses ranging from a minimum of .2 mils up to 1.5 mils. To date, most decking has been finished in a gray, thermosetting vinyl-type primer, although the company will furnish any color ordered.

The reverse-roll-coating system used in the line is said to provide excellent control of coating thickness. Both sides of the strip can be painted the same color, or each can be painted a different color. Because of the individual coating heads, different types of finishes can be applied to each side, providing the curing characteristics of the coatings are similar.

Rapid color changes can be accomplished on the top side of the strip by quickly moving new coating heads into position. Thus, it is feasible to paint the top side of the strip in more than one color without seriously interrupting production.

TO PAGE 37 →

MPM PHOTOS

Both uncoiler pass lines are served by this "up-and-down" shear. The device consists of fixed top and bottom blades with a moving, two-edged blade in the middle. (Sheet on lower pass is visible.) The top strip is severed by the movable blade pushing against the top fixed blade. Likewise, the lower strip is cut by the same middle shear forcing the sheet against the fixed lower blade. The shear is used for trimming the leading edge of a new coil and the trailing edge of coil in process, making a uniform splicing weld.



"Don't worry, ma'am...
it's coated with
ACROPON®"



It's not the first time this new washer and dryer have been threatened with rough treatment. They've been manhandled from the time they came off the assembly line.

But tough ACROPON kept them safe from scratches, chips and scuffs then... and will continue to protect them for years to come.

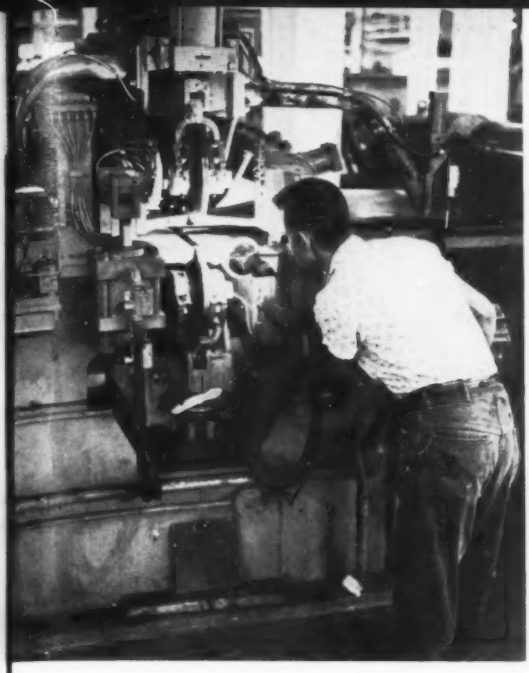
ACROPON finish by DeSoto—*the* outstanding thermosetting acrylic—brings lasting beauty to any appliance. Minimizes freight handling claims because rough handling can't hurt it.

Ask our field engineers to show you how ACROPON outperforms, outlasts any other finish.

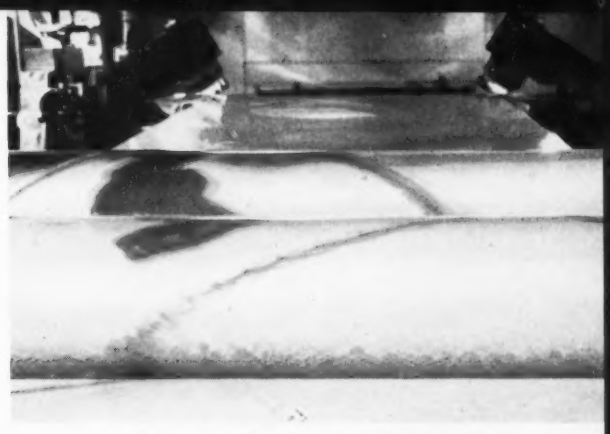
DeSoto Chemical Coatings, Inc.

1350 S. Kostner Ave., Chicago 23, Ill.

Circle No. 309 on Reader Service Card.



MPM PHOTOS



(left) — From the "up-and-down" shear, the two pass lines converge into one for the welding operation to splice the coils. After the two strips are resistance seam welded together, a hole is punched in the strip ahead of the weld. This hole is detected by an electric eye device preceding the coating rolls, and the rolls are automatically raised. Damage to the rolls from the weld seam is thus prevented.

(Above) — Following entry-end accumulator, a five-stage cleaning and phosphatizing section and a 20-ft. cooling tower, strip enters coating room. A reverse-roll coating system is used and, according to Wheeling, "allows very accurate metering of coating materials." Pickup and applicator rolls shown coat top of strip; rollers for coating bottom are located in background, under the strip. Roller guides on each edge of strip in background press sheet against lower coating rolls.

The cleaning and phosphatizing operation prior to painting has the following five stages: 1) 3500-gallon alkali wash, 30 seconds, 170 F; 2) 1200-gallon water rinse, 10 seconds, 150 F; 3) 1800-gallon phosphatizing, 15 seconds, 170 F; 4) 1250-gallon water rinse, 10 seconds, 150 F; and 5) 1000-gallon chromic acid rinse, 10 seconds, 150 F.

The equipment can process stock ranging from 16 to 32-gage, in widths of 24 to 48 in. Inside diameter of the coils at the entry end of the line can be from 20 to 24 in. At the delivery end the stock is coiled with an inside diameter of 20 in.

Maximum speed of the line, and also the normal operating speed, is 125 ft per minute. An automatic 25 percent overspeed replenishes the accumulators after their "reserve" stock has been depleted in starting a new coil in the line or removing a coil at the delivery end.

Four sets of drive bridles pull the strip through the line. The first and last bridles are driven by 25-hp motors, and the two middle units are powered by 50-hp motors. All bridles are made up of two 30-in.-diameter rolls. All carrying and driving rolls are neoprene coated, self-centering slit-type for keeping the strip in line during all operations.

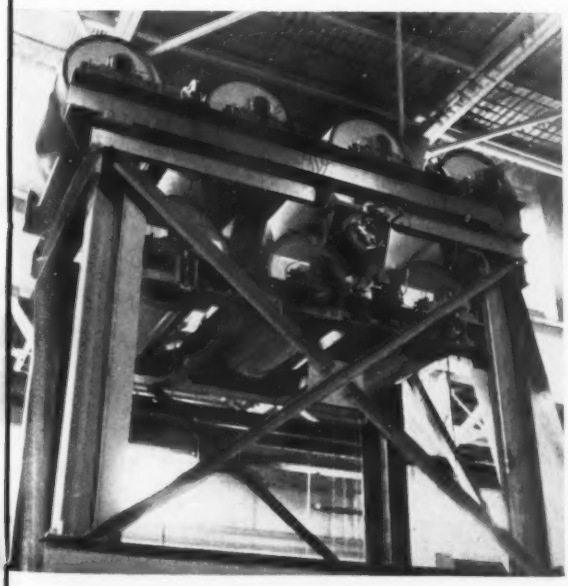
Operating crew for the line consists of four men — an entry end operator, a paint room attendant, a delivery-end operator, and a line attendant who assists the three operators.

Although the line is 600 ft long, the length of the strip in the line at any one time, because of the two accumulators and a cooling tower, is about 1000 ft.

Three overhead cranes serve the painting and forming department: one 50-ton-capacity model and two 10-ton units.

Operation of the coating line is controlled by two consoles — the "main" console at the delivery end of the line and another at the entry end. The main console has controls for every operation in the line. It can "dominate" the second console, which controls only the operations through cleaning and phosphatizing. This system allows the operator at the delivery end of the line to stop the entire line if he notices any defects in the finished strip emerging from the oven. Operators at the two consoles and the paint room attendant communicate by a telephone-loudspeaker system which allows them to keep in constant contact.

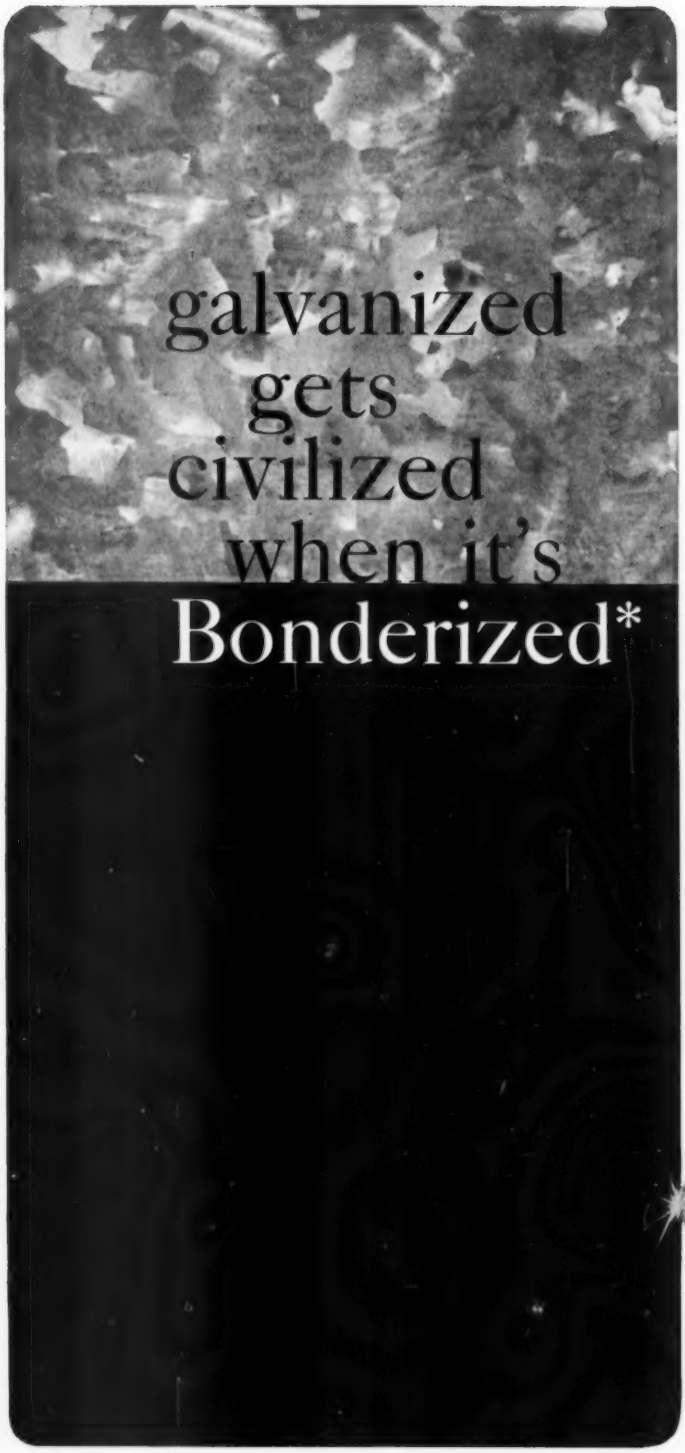
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(Left) — Following curing and quench the strip passes through the delivery end accumulator, which consists of four fixed upper rolls. With the lower rolls in the "down" position, 150 ft. of stock is accumulated. The lower rolls are in the "up" position while the line is running normally, and are lowered to provide time for a rewind coil to be removed from the recoiler without interrupting operation of the line. The accumulator allows one minute "free" time for the rewind coil to be removed.

(Right) — Coated strip is recoiled. Partly visible behind recoiler is a shear which cuts the strip upon receiving a signal from electric eye device. The electric eye is activated when it detects the same hole used to "warn" coating rolls that the weld seam is approaching.





Galvanized is great for corrosion resistance, but it's a bad actor when you try to paint it.

Bonderite* phosphate coating tames that galvanized surface and makes it take and hold paint like a long-lost brother. What's more, the same Bonderite that's so good for galvanized is as effective on plain steel as any Bonderite in the list.

Now you can use a combination of painted steel and galvanized components for extra corrosion resistance, top appearance and customer satisfaction.

Write, today, for full information. Parker Rust Proof Company, 2170 E. Milwaukee, Detroit 11, Michigan.

PARKER

FIRST IN SURFACE TREATMENTS FOR METALS SINCE 1914

*Reg. U.S. Pat. Off.

Photo shows bare galvanized surface (top), Bonderized surface (center), paint over Bonderite (bottom).

Circle No. 333 on Reader Service Card.

Roll forming and shearing steel roof decking

A "DIGITAL ELECTRONIC totalizing programmer system" sounds impressive, if not overpowering. But more important, it does an impressive job for Wheeling Steel in fabricating steel roof decking from the coil-coated stock.

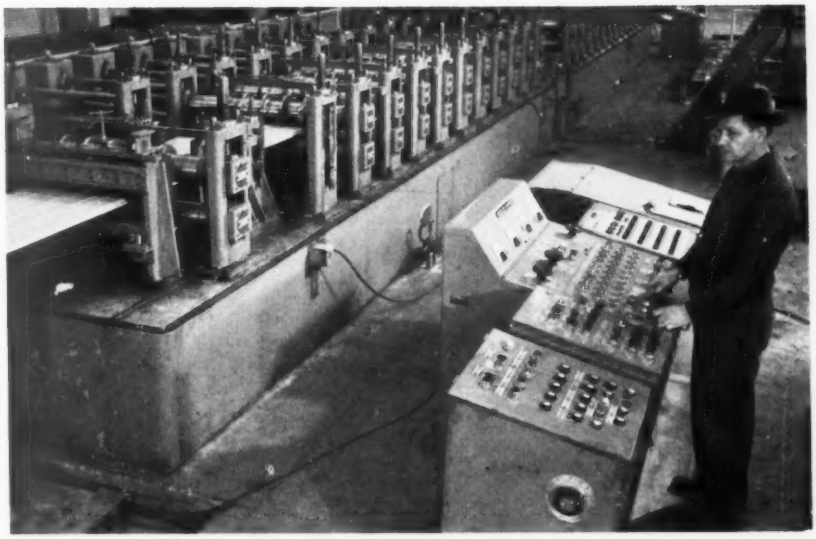
This electronic metering system allows the company to automatically shear the decking to specified lengths without slowing the forming and shearing line.

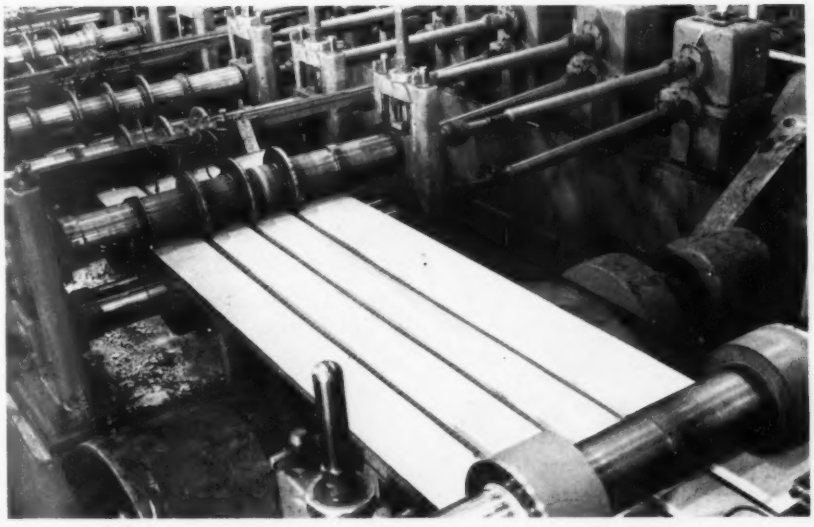
From the uncoiler, the strip first passes through 24 stands of forming rolls, which shape the reinforcing ribs and edge flanges. The edges are also trimmed. Next is the flying shear, controlled by the electronic metering system.

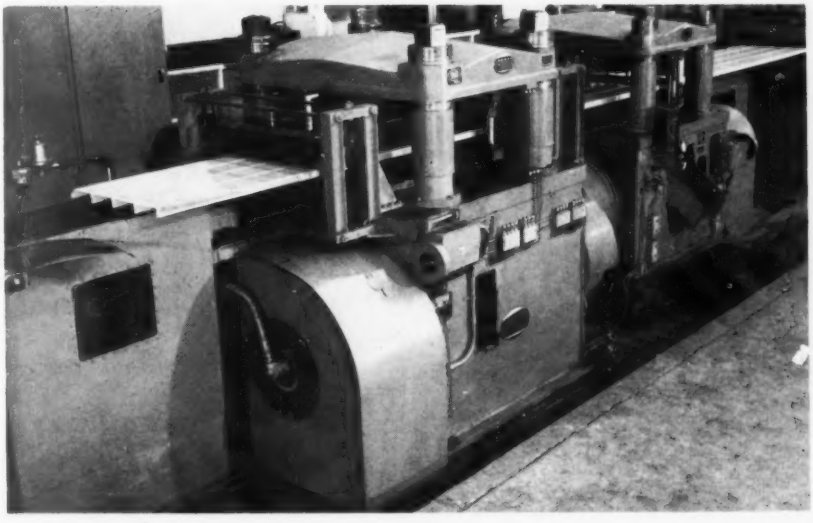
By "dialing" (at the main control panel) the length and number of pieces desired in that length, shearing "programs" are set up. Four such programs can be sequenced in advance. As a simple example, the machine can be programmed to cut 10 20-ft lengths, 5 12-ft lengths, 8 10-ft lengths, and 13 8-ft lengths. Furthermore, after the first sequence has been finished (10 pieces 20 ft long), that sequence can be re-set. This will be run after the second, third and fourth sequences are completed. This feature is particularly valuable when it is necessary to shear only a small quantity of pieces in specific lengths, since production does not have to be interrupted to manually adjust the equipment.

After the decking is sheared, it moves through a flying press that crimps the end to provide for a lap joint. This operation can be by-passed, if necessary.

Next is a run-out table consisting of driven rolls which carry the decking away from the forming and shearing equipment at an accelerated speed. At the end of the run-out table, automatic arms push the decking to either side for packaging and bundling. The bundles of decking are then moved to the shipping area by overhead crane. ——— *MPM*







PHOTOS COURTESY THE YODER CO.

(Top photo) — Operator at main control console of forming-shearing line sets up shearing sequence by "dialing" various lengths and quantities. (Center) — Coated strip passes through 24 stands of forming rolls. In addition to the narrow reinforcing ribs pictured (type A), the company also offers decking with a wider rib (type B), which is said to have higher carrying capacity. Type B can also be furnished as an acoustical type of decking, with insulation placed in the ribs. (Right) — Electronically controlled flying shear (right in photo) and flying crimping press (left in photo). Maximum speed of the forming-shearing line is 300 feet per minute.

Bethnamel brings direct-on porcelain enameling to production status



In the less than two years since it emerged from pilot-plant status, Bethnamel has given a healthy shot in the arm to porcelain enameling. Its acceptance in a wide variety of applications was quick, and its performance has been excellent.

Solves Boiling and Fishscaling Problems in Single Coating

Bethnamel has brought to production status the long-cherished dream of direct-on finish coating. Because of its very low carbon content, Bethnamel has eliminated boiling and fishscaling in single-coat enameling. To convert to direct-on enameling with Bethnamel, it is necessary to make only simple, modifications of existing two-coat pretreatments.

Costs No More Than Enameling Iron

With Bethnamel you can lower your costs in more ways than one, especially in single-coat enameling. And you pay no more for Bethnamel than for ordinary enameling iron. Our representatives will be glad to discuss it with you. Let us send you a copy of our 6-page Technical Folder 734; just write to Room 1041, address below.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Export Sales: Bethlehem Steel Export Corporation

BETHNAMEL DRAWS WELL

One glance at this crisper pan tells you "tough draw." Bethnamel takes this severe forming in good shape, even where relatively sharp corners are involved.

BETHLEHEM STEEL

Circle No. 306 on Reader Service Card.



SIMPLE CHANGES IN PRE-TREATMENT

You can single-coat Bethnamel sheets with only slight modifications to your present two-coat cycle. In this photo, Bethnamel refrigerator components receive a nickel flash for good adherence of enamel to steel.

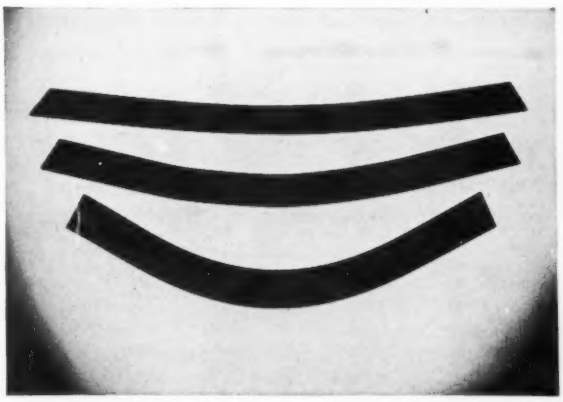


NO SPECIAL FRIT NEEDED

For direct-on enameling, you can use the same titanium-opacified frit as in the two-coat process. Frit makers will be glad to work out technical details with you.

SUPERIOR SAG RESISTANCE

These three samples were subjected to firing temperatures of 1600 degrees F. It's easy to see that Bethnamel (top) held up better than enameling iron (center), and cold-rolled sheet (bottom).



BETHLEHEM STEEL

Steel

for Strength
. . . Economy
. . . Versatility



THE PLANT IS OURS... THE COMPLETE POST-CASTING FACILITIES ARE YOURS

We're die casters, of course. Biggest, best-equipped, most service-minded in the business. More facilities, more highly experienced personnel, the widest range of die-castable alloys, our own fleet of trucks to give overnight rush service when needed. When you want a part die cast, you can't do better than Doehler-Jarvis. *But that's not all!* If you're a cost-conscious purchasing agent or production man, consider the other advantages of using Doehler-Jarvis. We'll not only die cast the part you want, but drill it, tap it, ream it, buff it, degrease it, finish it (plate it, paint it, anodize it, or whatever), sub-assemble it, inspect it, package it and ship it. To you or direct to your distributors. The plant is ours, but the production line—from blueprint to final packaging—is yours. Chances are we can save you money every step of the way. Ask Doehler-Jarvis to quote on your very next job. Call or write the Doehler-Jarvis office or plant nearest you.

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Circle No. 311 on Reader Service Card.

Rheem Builds Research Center

A new building housing the Development Center of Rheem's Home Products Group was expected to be completed about December 1 at 7600 S. Kedzie Ave., Chicago.

The one-story structure is expected to be one of the outstanding research and development facilities in the field of heating, air conditioning, and related equipment, according to Vearl J. Heinis, president of the Home Products Group.

The center will devote more than 12,000 sq ft to laboratories, model shop and research office space. It will serve as the headquarters for research activities carried on at Chicago and other Rheem plants in the Home Products Group.

Mueller Expands Laboratories

Mueller Climatrol, a division of Worthington Corp., has announced the completion of its Milwaukee cooling laboratories expansion program. The new and modified test rooms can simulate the climate of any area of the world where Mueller Climatrol cooling is sold, the company says.

Total space of the laboratories was increased from 3700 to 6000 sq ft. Cooling capacity available for testing equals the air conditioning requirements of 15 average-size homes. The facilities have been designed to accommodate up to 10-ton air conditioners and 7½-ton heat pumps.

Brooker Leaves Whirlpool

Robert E. Brooker has resigned as president of Whirlpool Corp. to accept the position of president, Montgomery Ward & Co.

The Whirlpool board of directors announced that Elisha Gray, chairman of the board, will resume the dual function of chairman and president. The company says there are no plans to replace Brooker.

At a special meeting of the board, Gray said: "It is completely understandable that Tom Brooker accept the post offered him by the Montgomery Ward board of directors. His depth of training, experience and good judgment eminently qualify him for this splendid opportunity. The Whirlpool board of directors and the entire Whirlpool management extend to him their sincere congratulations and best wishes . . . "

Whirlpool Kitchen in German "Food Fair" Exhibit

Whirlpool Corp.'s "Miracle Kitchen" was one of the featured exhibits at the recent USA Food Fair, 1961, held in Hamburg, Germany. The company's kitchen of the future, a veteran of national and international expositions as a representative of the American appliance industry, was accompanied by a variety of current RCA Whirlpool appliances.

The exhibit was requested by the U. S. Department of Agriculture, Foreign Agriculture Service, as representing the industry's contribution to the American way of life.

The kitchen, pictured, features a floor cleaner which will scrub, mop, vacuum, wax or polish floors. Meals are selected, cooked and served in seconds, all automatically and by remote control. A serving cart walks to the table, loads, scrapes, washes, dries and stores dishes.



Kelvinator Dedicates Plant of Puerto Rican Subsidiary

The first major appliance plant in Puerto Rico was officially dedicated recently by executives from American Motors Corp., its worldwide appliance subsidiary Kelvinator International Corp., and Puerto Rican government officials.

The modern one-story plant of Kelvinator of Puerto Rico, Inc. will produce major appliances for the Island Commonwealth and other Caribbean countries, and will serve as a pilot plant for the orientation and training of personnel from foreign licensee manufacturers, according to G. T. Etheridge, vice president of Kelvinator International.

The 22,000-sq-ft plant has been leased by the newly formed company, and equipped with modern tools and metal finishing machinery. Joseph A. Barrera, manager of the plant, received training in Kelvinator's major manufacturing plant at Grand Rapids, Mich.

"The refrigerator models produced in Puerto Rico, by Puerto Ricans, have been specially designed and built to operate efficiently and economically in

Modern one-story plant houses Puerto Rico's first producer of major electrical appliances — Kelvinator of Puerto Rico, Inc.



tropical heat and humidity," Etheridge said. According to the company, the 10-cu-ft refrigerator has a "polar zone" freezer with an insulated baffle, plus



One of the largest pieces of machinery in Puerto Rican plant is 250-ton press brake used to notch, pierce and form steel sheets.

improved insulation through the cabinet, and other engineering developments.

The company feels the refrigerator plant will be of considerable importance to Kelvinator International in the training of administrative, technical and production personnel of future overseas operations. At present, these people are trained in the firm's Grand Rapids plant and in Detroit engineering laboratories.

Kelvinator officials point out that the new factory is not merely an assembly plant for U.S.-made components. All major cabinet components are actually manufactured in the Puerto Rican plant.

The new company expects to quadruple its current refrigerator sales rate in Puerto Rico and other countries of the Caribbean by the end of 1965.

Bettinger Reorganizes With Hutt as President

Glenn Hutt has been named president of the recently reorganized Bettinger Corp., Milford, Mass. Bettinger is a supplier of ceramic coatings to metal, and also has a plant in Toledo, Ohio. The firm also has eight foreign licensees. A group of Belgian financial people are the principle stockholders in the reorganized company.



Hutt comes to his present assignment after 27 years with Ferro Corp. He previously served 3½ years with Frigidaire. While at Ferro, he spent five years in Australia starting a subsidiary.

He is past president of the Sales Executive Club of Cleveland, the Porcelain Enamel Institute and the Armed Forces Chemical Association, and is also a fellow of the American Ceramic Society.

AIEE Appliance Subcommittee Given Full Committee Status

The American Institute of Electrical Engineers Domestic Appliance Subcommittee met on October 19, 1961 during the fall general meeting of AIEE, for a review of progress and future plans and a complete discussion of plans for the 1962 Appliance Technical Conference which will be held at the Deshler-Hilton Hotel in Columbus, Ohio, on May 22-23. It was learned that the subcommittee now has the official approval of AIEE for full committee status. The final step in this regard will be publication of the action by the Institute.

In addition to W. F. Kindt, GE-Louisville, chairman of the committee, those present at the Detroit meeting included: H. G. Baker, Georgia Power Co.; J. C. Burdett, Westinghouse Electric Corp.; H. D. Chase, Metal Products Manufacturing Magazine; D. E. Clapp, Proctor Electric Co.; T. H. Cline, Stevens Mfg. Co.; W. R. Crawford, Whirlpool Corp.; R. L. Heckman, Gen-

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Encouraging Financial Figures Reported by Manufacturers

Financial reports received in recent weeks indicate many manufacturers of original equipment are experiencing accelerated business. Some firms even report new highs in sales and/or earnings. Among the companies with encouraging financial news are the following:

Eureka Williams — Vacuum cleaner sales are up for the fourth straight month. September 1961 sales are 67 percent higher than the same period in 1960. Overall increase for the four-month period from June through September over the same period last year is 48 percent.

Kawneer — The company's architectural metal products showed increases of 26 percent in net earnings and nine percent in sales in the first nine months of the year. Third-quarter sales and earnings were the largest in history. President Lawrence J. Plym predicts an all-time sales record for 1961.

Norge — Factory sales in October rose 26 percent over October 1960, moving year-to-date volume 33 percent ahead of last year. Sales for the first 10 months of this year exceeded last year's total sales, and Board Chairman Judson S. Sayre predicts: "This year we will probably establish a second high all-time annual sales record, exceeded only by 1955."

Admiral — Earnings after taxes for the first nine months of 1961 were $1,390,664, compared with net earnings in the comparable period of 1960 of $497,072. Third quarter figures show after-taxes earnings of $957,113. This compares with a loss of $80,958 in last year's third quarter.

Maytag — In spite of slightly lower sales for the first nine months of the year, earnings increased from $7,989,731 to $8,436,488. For the third quarter, sales totaled $26,594,781, compared to $25,031,420 in the third quarter a year ago.

Zero Mfg. — Income for the first half of the current fiscal year hit a record high, and profits were up substantially over the like 1960 period. For the first six months ended September 30, sales for the company rose to $3,814,074, compared to $2,548,183 for the first six months of last year. Net earnings amounted to $185,405, up from $76,363.

Webcor — Record high earnings are reported in the first quarter of the current fiscal year. At the same time, the company reported a loss for the fiscal year ended May 31. Earnings for the three months ended August 31, 1961 were $911,000.

Siegler — Sales and earnings for the quarter ended September 30 were the largest of any three-month period in the company's history. Sales for the period amounted to $28,089,550 and net income was $1,036,254. In the first quarter of last year, the company had sales of $24,283,123 and net income of $957,494.

Waste King — A continuation of net profit improvement is reported for the six months ended September 30. Net profits in the period were $443,134. The profit reported is not subject to federal income taxes because of the company's loss carryforward. Bertram Given, president, said although the remaining six months of the present fiscal year customarily are less profitable than the first half, the company expects to increase its profits during the balance of the year.



'Tis the season of peace on earth, goodwill toward men. May this Christmas spirit spread... reaching all corners of the earth... and remain with us forever.

PEMCO

Division of The Glidden Company
Baltimore 24, Maryland

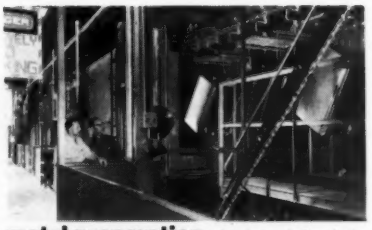
Quality metal products deserve "the finishing touch" of Mahon

another example: Tappan's new dishwasher and famous '400 RANGE SERIES' of appliances now finished in unique COMBINATION system

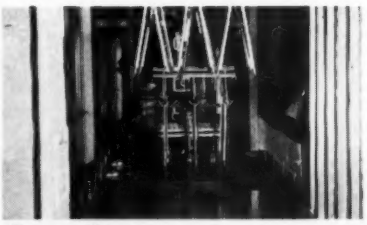
For any product finishing, ***"Mahon designs equipment but engineers results"***. The recently installed Mahon finishing system for Tappan fully attests to the statement. Here's equipment designed to improve quality, provide painting versatility, expand capacity, reduce material inventories and slash finishing costs. Mahon, working with Tappan plant engineers, supplied the answer—an integrated finishing system to do washing, phosphatizing, dip painting, spray painting, plasticol coating and oven baking of about 300 different parts. Floor space? It *saves* 4000 sq. ft. of production area as it has now been relocated on the plant roof. Results? A versatile, efficient system that met all requirements *and* is now saving Tappan $60,000 a year. Can you afford not to call in Mahon on your metal cleaning and industrial finishing problems?



The Tappan Co. of Mansfield, Ohio, a quality leader in the home-range field has now expanded into the dishwasher market with advanced-design, big-capacity models... finished by Mahon.



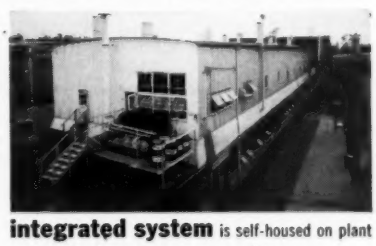
metal preparation, cleaning and phosphatizing is done in a seven-stage Mahon automatic-cycle unit.



dip coating or spray painting in same unit—dip tank is on tracks and automatically positioned.



plasticol coating is by high-pressure spray in Mahon water-wash booths with reclamation pans.



integrated system is self-housed on plant roof—made change-over easy, saved space.

MAHON INDUSTRIAL EQUIPMENT
• Complete Finishing Systems • Metal Cleaning Equipment • Pickling Equipment • Painting Facilities—spray, dip and flo-coaters • Drying and Processing Ovens • Special Process Equipment

MAHON PLANT SERVICES
Steel Fabrication—weldments, machining and assembly • Structural Steel—fabrication and erection • Rolling Steel Doors—standard, Labeled and power-operated

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MAHON

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→ FROM PAGE 44

eral Electric Co.; G. B. Helmen, Westinghouse Electric Corp.; J. Liebermann, Ranco, Inc.; S. E. Manecke, Robertshaw-Fulton Controls Co.; W. R. Milby, Detroit Edison Co.; E. O. Morton and B. F. Parr, Westinghouse Electric Corp.;



MPM PHOTO

Members of AIEE domestic appliance group at recent meeting. Formerly a subcommittee, the group now has full committee status.

C. J. Rodden, Philco Corp.; and R. A. Sand, Hotpoint Div., General Electric.

John Liebermann, chairman of the 1962 Technical Conference, reported a tentative lineup of 15 conference papers and all other plans well under way for an outstanding conference in Columbus.

Automatic Washer Shipments Set New September Record

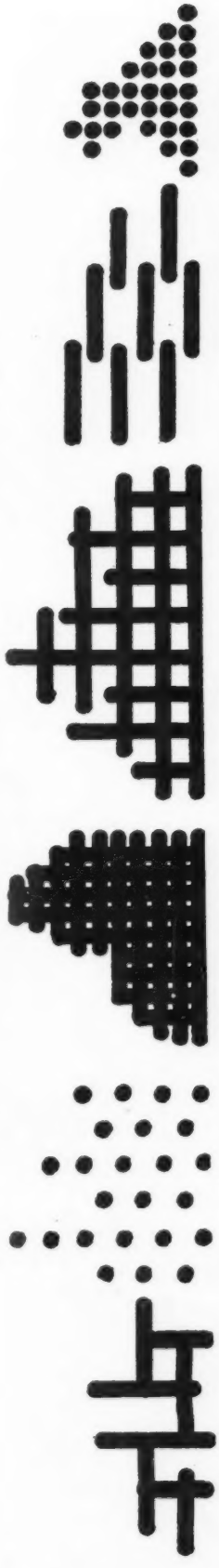
Appliance manufacturers shipped more automatic washers, 323,336 units, during September than in any previous September in history, according to an announcement by Guenther Baumgart, president of the American Home Laundry Manufacturers' Association.

September automatic washing machine sales, Baumgart reported, were second only to the record month of October, 1956 when 350,000 units were sold. Also, September shipments were 16 percent greater than in September 1960. Total automatic washer sales for the first three quarters of 1961 amounted to 1,970,636 units, a three percent increase over the 1960 period.

Kelvinator Pushes Training

A series of product service meetings has been inaugurated by Kelvinator for all distributors and zone managers, plus field service supervisors. R. S. Geran, general service manager, said the training sessions will span three weeks in order to keep the groups small enough for individual participation and discussion.

The training sessions begin with a study of manufacturing processes in the Grand Rapids, Mich. plant and indoctri-



DIAMOND PERFORATED METALS

are NOW produced in a NEW streamlined plant to meet Low Inventory Purchasing Requirements

Present-day production managers cut costs by keeping inventories as low as possible and DIAMOND has cooperated . . . by carrying large stocks of materials and delivering finished or partly finished perforated metal parts in lots to meet the purchaser's production schedules.

NOW we have taken another big step to speed deliveries and cut production costs. A New Building . . . additional high-speed equipment and new straight-line operating procedures . . . all combine to assure even quicker service than was possible before.

Write us regarding ANY requirement in perforated metal. Our experienced engineers welcome opportunities to make money-saving suggestions . . . without charge or obligation. Catalog on request.

Diamond mfg. co.
WYOMING (Wilkes-Barre area)
Pennsylvania

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Season's Greetings

May contentment,

good health and an

abundant life be yours

during the coming year.

Chicago Vitreous CORPORATION 1435 SOUTH 58th COURT, CICERO 50, ILLINOIS

A DIVISION OF THE EAGLE-PICHER COMPANY — SERVING THE NEEDS OF THE INDUSTRY SINCE 1918

CONTINUED

nation in the work and technique of the Customer Quality Assurance Laboratory and program. The service school then moves to Detroit for the remainder of the training session.

PMI Takes New Name

Jefferson D. Keith, managing director of the Pressed Metal Institute, has announced the association's adoption of a new name — American Metal Stamping Association.

According to Keith, "The aims and objectives continue to be—to promote up-to-date knowledge of stamped components and products enlarging the field of metal stampings; encourage continuous improvement in all phases of the industry; encourage more effective management control and practices; and serve as a spokesman on all matters relating to the industry."

Designers Elect Officers

The Industrial Designers Institute elected the following national officers at its recent annual meeting of the board of directors: chairman — John Vassos, FIDI, Norwalk, Conn.; president — Leon Gordon Miller, FIDI, Leon Gordon Miller Associates, Cleveland; executive vice president — Jon W. Hauser, Jon W. Hauser, Inc., St. Charles, Ill.; secretary — Theodore C. Clement, Eastman Kodak Co., Rochester, N. Y.; and treasurer — Yasha Heifetz, Clinton, Conn. Three regional vice presidents were also elected.

The officers will serve for the two-year term, October 1961-1963.

Hooker-Parker Merge Planned

Hooker Chemical Corp. and Parker Rust Proof Co. have announced they are negotiating for a merger of Parker into Hooker by issuance of ¾ of a share of Hooker common stock for each of the outstanding shares of Parker, and one share of a new five percent preferred stock, $100 stated value, of Hooker for each 20 shares of outstanding stock of Parker.

If the negotiations result in an agreement approved by the boards of both firms, it is anticipated that the proposal will be submitted to the stockholders of both companies early in 1962.

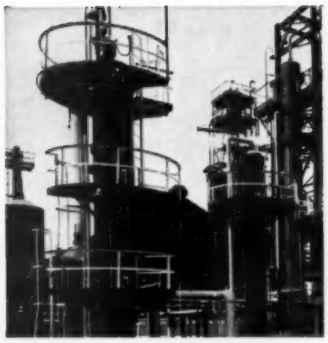
Associations Consider Merger

First steps to consider consolidation of the largest engineering societies in the world — the American Institute of Electrical Engineers and the Institute of Radio Engineers — have been taken, according to a joint announcement by the associations.

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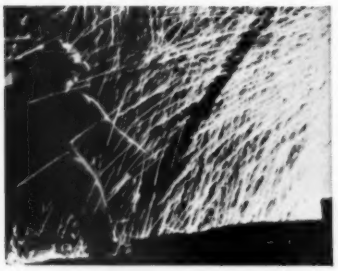
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Thirty-six million dollars in new facilities...





At Alan Wood, capital expansion totaling $36,000,000 in a two year period is part of an overall plan to serve you well today . . . and tomorrow. New rolling and blooming mills have stepped up Alan Wood capacity for service. Our fully integrated operation cuts red tape, gives you uniform quality . . . consistently and on time. Order your steel plate, your sheet and your strip from the company that offers the combination of capacity, quality and delivery!

***that's* YOUR ADVANTAGE *at* ALAN WOOD STEEL COMPANY**

Conshohocken, Pa. • STEEL PRODUCERS WITH THE CUSTOMER IN MIND

DISTRICT OFFICES AND REPRESENTATIVES: Philadelphia • New York • Los Angeles • Boston • Atlanta Cincinnati • Cleveland • Detroit • Houston • Pittsburgh • Richmond • St. Paul • San Francisco • Seattle Montreal, Toronto and Vancouver, Canada: A. C. Leslie & Co., Ltd.

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CONTINUED

In a resolution passed by the boards of directors of both societies, a committee has been formed to determine the feasibility and form of such consolidation. The proposed new organization would be international in scope and involve 150,000 engineers, scientists, educators and industrialists.

Two New Rolling Mills In Use at Alan Wood

A 40-in. blooming mill and a 110-in. plate mill have been officially placed into operation at Conshohocken, Pa. by Alan Wood Steel Co. Part of a $36 million expansion and modernization pro-



Pennsylvania Governor David L. Lawrence pushes a button at dedication ceremonies to activate new equipment. At right is Alan Wood President Harleston R. Wood.

gram, the new facilities will enable the company to enter the market for steel plates up to 96 in. wide. Previously, the company had been limited to widths of 72 in.

Speaking at dedication ceremonies, Harleston R. Wood, president, said: "The importance of our undertaking is underscored by the fact that we expect to ship 100 tons of steel plates with 85 man hours of labor. This is approximately a three-fold increase in productivity over our recently abandoned old plate mill."

2500 Coin-Op Cleaners Predicted by End of 1961

Twenty-five hundred coin-operated dry cleaning and laundry centers representing an investment of more than $125 million will be in operation throughout the United States by the end of 1961, according to a prediction by Gerald O. Kaye.

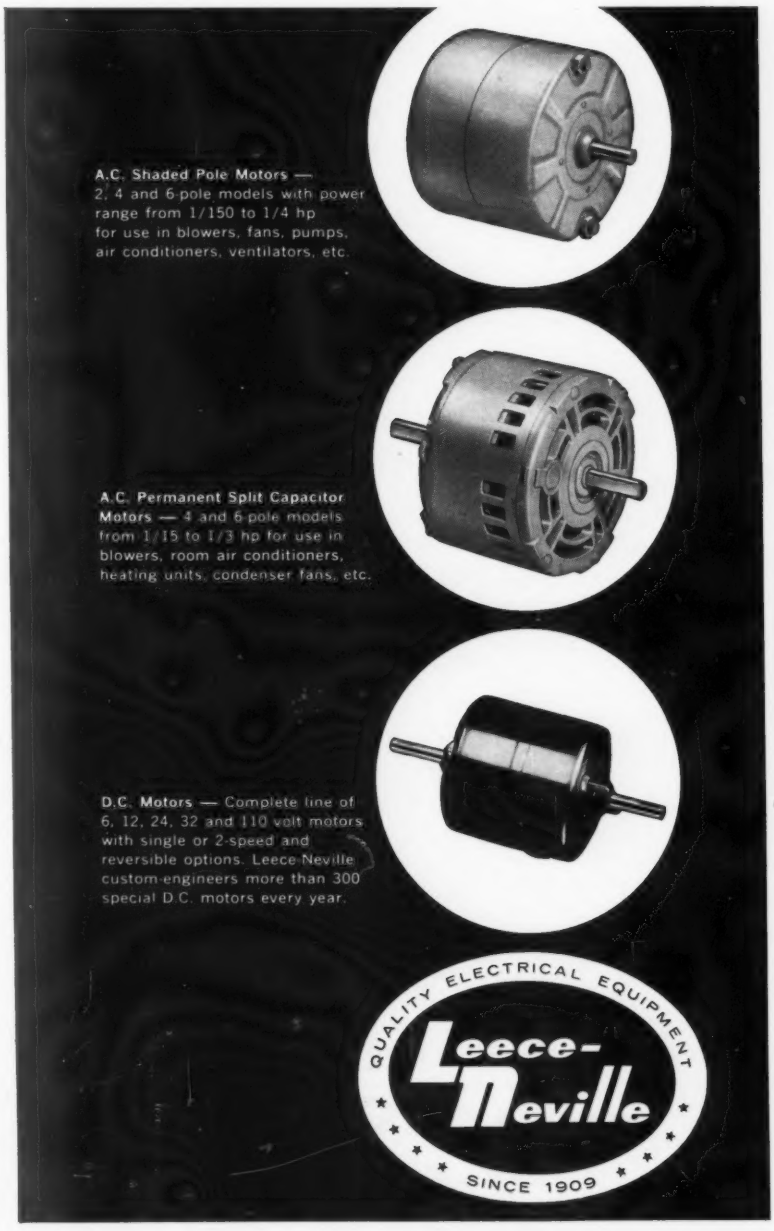
Kaye, board chairman of Friendly Frost, Inc., made the statement at the opening of a New England headquarters

TO PAGE 80 →

AC OR DC—FOR EFFICIENT, RELIABLE, LOW-COST POWER, SPECIFY LEECE-NEVILLE MOTORS

The world's largest independent supplier of fractional horsepower D.C. motors for automotive use also offers you a complete line of quality A.C. motors capable of meeting U.L. and C.S.A. application tests. Advanced design and modern manufacturing facilities assure peak performance and delivery to your schedules. Select a basic unit, let us help you adapt a basic unit, or we will custom-engineer a special motor to your requirements.

For information on A.C. motors, write The Leece-Neville Company, Dept. MP-12, Georgia Division, Athens Highway, Gainesville, Georgia. For D.C. motor data, write D.C. Motor Div., Cleveland 3, Ohio.



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MPM-1261

THE O. HOMMEL CO.

PITTSBURGH 30, PA.

West Coast — 4747 E. 49th Street, Los Angeles, California

HOMMEL

MPM

personals

William Nissensohn has been promoted to the position of purchasing agent for **Welbilt Corp.**'s range, air conditioning and Garland divisions. He joined the company in 1954.

Carl P. Rommel has been elected vice president-research and development of the **Bradley & Vrooman Co.** He was formerly technical director. The company also announced the appointment of **Walter L. Churchill** as technical service and sales representative for Wisconsin, Minnesota and Iowa.

Don Fowler, former chief of industrial hygiene for the Chrysler Corp., has joined the **Lead Industries Association.** He succeeds the late Manfred Bowditch as the association's health and safety director.

Metal & Thermit Corp. has announced the appointment of four group vice presidents. **H. E. Hirschland** has been designated as group vice president, with the commercial development and research divisions reporting to him. **B. W. Weber** is group vice president in charge of the manufacturing, employee relations and administration divisions. **J. L. Oberg** is group vice president in charge of minerals, ceramics and welding divisions, and **D. W. Oakley** is group vice president for the chemicals, coatings and plating divisions.

Charles R. Wirshing has been appointed general manager of **Amchem Products, Inc.,** Western Div. in Niles, Calif. He will continue to be western division sales manager, a position he has held since 1957.

Jerome L. Strauss has joined **Landers, Frary & Clark** as vice president in charge of the Government Products Div. He was previously senior vice president of Budd Electronics, Inc.



HORENBURGER



LAWSON



GOSS



WALTON

William E. Horenburger has been appointed national sales manager for **General Bearing Co.** and its wholly owned subsidiary, BMB Corp. He was formerly associated in an executive sales capacity with Thomson Industries and Aetna Ball and Roller Bearing Co.

James O. Lawson has been appointed to the newly created position of manager of quality control for the Parts Div. of **Sylvania Electric Products, Inc.** He will be responsible for the coordination of the quality control programs of the nine plants in the division.

George L. Chamberlin, a member of General Electric's New York corporate management services activity, has been elected vice president and treasurer of **Bell & Howell Co.** He will be responsible for corporate financial planning and administration.

Robert W. Thomas has been named assistant to Austin Rising, vice president and manager of marketing for **York Corp.** Thomas will function in a staff capacity to help promote and sell all York products through regular line selling organizations.

J. G. Caffery has been appointed eastern representative for **Cook Paint & Varnish Co.** He will maintain an office at 744 Broad St., Newark, N.J.

Robert G. Hill has been named vice president of sales of the **Leece-Neville Co.** He has been with the company since 1941 in a wide variety of positions, beginning in the assembly department and including work in engineering, technical service and sales.

Howard J. Goss has been named to the newly created position of vice president-director of marketing for **Harper-Wyman Co.** He had been vice president-sales before his recent appointment.

Arthur K. Walton has been elected to the board of directors of **Whirlpool Corp.** He is vice president of factories, Sears, Roebuck & Co.

James M. Kimbrough has been appointed assistant general manager of sales of **Republic Steel Corp. P. H. Pocock** succeeds Kimbrough as manager of sales of the sheet and strip division. He had been assistant manager of the division. Kimbrough joined Republic in 1936.

Eric L. Sokol, formerly a manufacturing executive with Link Div., General Precision, Inc., has been appointed manager of the **National Rejectors, Inc.,** plant in Hot Springs, Ark. Sokol, who had been with Link Div. since 1952, was manufacturing manager for industrial products and subcontracts.

Clifford J. Kimmel has been appointed special project engineer for **C. V. Hill & Co.** He will be placed on special assignment with National Refrigeration Mfg., Inc., Glendale, Calif., West Coast Div. of Hill Corp. He will work under the direction of National's president, Charles Walling.

Curvin J. Trone, Jr. has been appointed to the new position of operations controller of **Whirlpool Corp.** Trone, currently assistant to the president, will be responsible for financial operations in manufacturing, sales and administrative areas and will report to Edward C. Cudmore, controller.

Robert A. Collett has been elected a director of the **Geo. D. Roper Corp.** He is general assistant to the vice president in charge of factories of Sears, Roebuck & Co.

Kenneth W. Trout has been appointed sales manager-freezer division, **Admiral Sales Corp.** He had been sales manager of Ben-Hur Mfg. Co. the past three years.

WIRSHING



STRAUSS



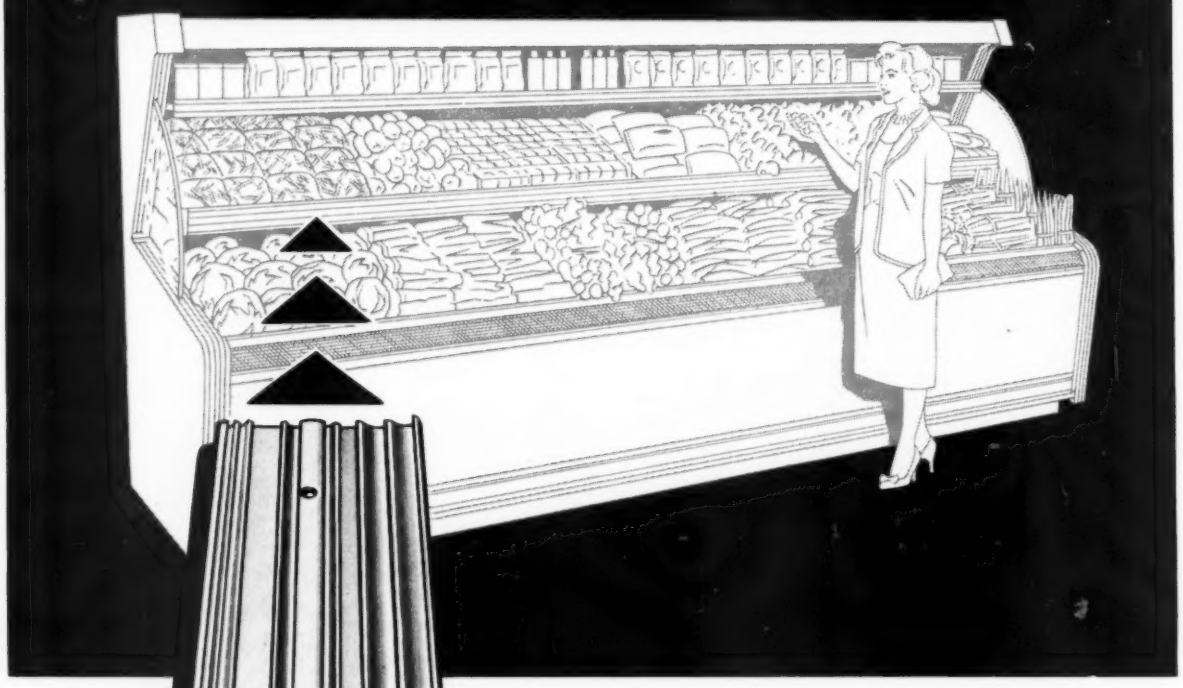
CAFFREY



HILL



FOR USEFULNESS AND BEAUTY **Hill** FOOD MERCHANDISERS SHOW PRICES WITH TAG MOULDING





. . . from GENERAL EXTRUSIONS

The pleasing design and the three spacious refrigerated decks of this new merchandiser by C. V. Hill and Company, Inc., put new life, vigor and profit in the produce department of a modern supermarket. Prices of each item are shown without detracting from the beauty of the merchandiser or the natural appeal of field-fresh produce.

General Extrusions, Inc., supplies ten-in-one moulding to enhance all Hill's many refrigerated food displays and to permit the easy insertion of 10 different sizes of price tags and point-of-sale merchandising cards. This moulding is extruded, drilled, countersunk, polished and Generalustre anodized by G.E.I. before delivery to Hill.

This is another instance of how General Extrusions can meet fabricating and other standard or special needs and problems in developing new products or improving established ones. New customers become regular customers because of General's brand of attention to their needs.

Call our nearest sales office or write for literature.

GENERAL EXTRUSIONS, INC.
P.O. Box J, 4040 Lake Park Road, Youngstown 7, Ohio
Sales Offices at St. Louis, Chicago, Grand Rapids, Chattanooga, Pittsburgh, Cincinnati and Cleveland

Consult Your Classified Phone Book Under Aluminum Products

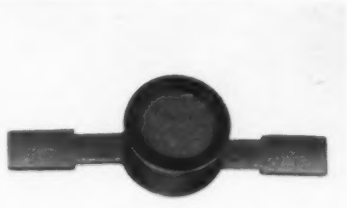
Circle No. 313 on Reader Service Card.

MPM

new supplies and equipment

For further information on New Supplies and Equipment, use Reader Service Card on pages 63 & 64.

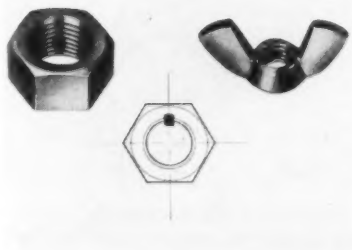
Sub-Miniature Thermostat



A complete line of economical, fast-response thermostats has been announced by Thermel, Inc. One of the first is the 2100-1 unit, specially designed for use in countertop appliances, fire warning devices, etc. The sub-miniature thermostat is said to be dust free, responds quickly and accurately with a positive bi-metal snap action. Copper alloy terminals are corrosion resistant, and the contacts are gold plated. The unit can operate in a temperature range of from –65 to +380 F. Temperature differential 7 F, temperature tolerance ± 2 F. Electrical rating is 2 amps, 125 volts ac rms. Size is .600 OD, and .375 OAH.

Circle No. 201 on Reader Service Card.

Nut Pellet-izing



Complete facilities for inserting nylon pellets into all types of nuts and female parts is announced by the Nylok-Detroit Corp. The process involves pelletizing equipment that inserts the pellet from the inside without breaking through the outer walls of the nut. This method is said to retain full structural strength of the part and, at the same time, offers good locking and torque characteristics. All nuts, designated Type "R" after pelletizing, can also be applied to male threads from either side. As the pellets are on the inside, external finishes on decorative nuts are not affected.

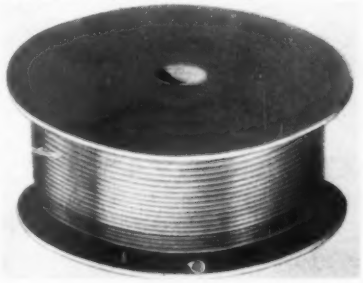
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Combustion Catalyst

An entirely new chemical method of improving and controlling the combustion process of coal or oil in all types of industrial boilers has been developed by Harco Chemical Co. The new combustion improver, Harco Combustion Catalyst, uses a complex of metallic catalysts first developed during research for solid fuel rocket propellants. Blending in a liquid carrier, these catalysts aid in disintegration of slag and scale deposits throughout boiler gas passages and combustion area; prevent corrosion from high sulphur-vanadium fuels; and permit reduction of excess air.

Circle No. 203 on Reader Service Card.

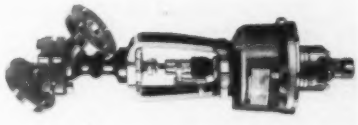
Copper Capillary Tubing



A new type of vacuum annealing furnace is used by Avins Industrial Products Corp. to produce high uniformity, controlled grain size capillary tubing that is said to be completely clean and free of residue inside and very bright outside. It is furnished on level-wound disposable reels. Following the drawing process, the bore is rinsed with a special solvent to remove all residue, oxide, scale and drawing lubricant. The copper tubing is used in the construction of automatic controls for appliances, the piping to connect up various components, and for heat transfer apparatus such as heaters, coolers, evaporators and condensers.

Circle No. 204 on Reader Service Card.

Split-Body Valve



A line of split-body valves and piston actuators has been introduced by General Controls Co.'s Hammel-Dahl Div. "S" style valves, with actuators at 90 deg. to the pipeline, offer traditional design with increased flow capacity. Equipped with actuators at 45 deg. to the pipeline is the "Y" style valves which set new standards for control valve Cv's per nominal pipe size. Conceived to permit easy replacement of the seat ring — and inherently single-seated — the designs are said to incorporate powerful piston-type pneumatic actuators to achieve stable control of high pressure drops.

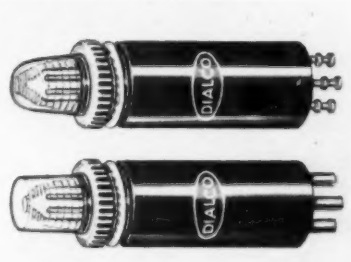
Circle No. 205 on Reader Service Card.

Double Bearing Air Inlet

Higher spindle speeds up to 4000 rpm on metalworking machines are said to be possible with the new double bearing air inlet developed by The S-P Mfg. Corp., manufacturers of pneumatic and hydraulic cylinders, boosters and chucking equipment. Designed with fewer parts, the compact RM4 air inlet requires less maintenance and has a special inlet seal that adjusts itself automatically through working pressure, further reducing maintenance. Available on S-P rotating air cylinders of 3, 4-1/2, 6 and 8-in. bore sizes, the inlet features a smaller shaft for increased speed.

Circle No. 206 on Reader Service Card.

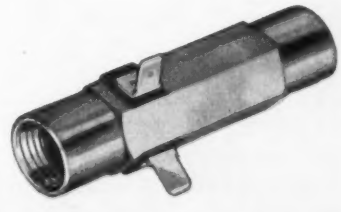
Neon Indicator Lights



The STI Series of sub-miniature transistorized neon indicator lights has been announced by Dialight Corp. Each assembly is a completely enclosed integrated unit, with the lampholder containing the neon lamp, transistor driver and required circuitry. Applications of the STI Series indicator lights include: data processing equipment and computors; automation; control equipment; and warning-signal applications. Lenses, made of high-heat plastic, are available in the omni-directional stovepipe or long cylindrical shape, with or without fresnel diffusing rings, and in a choice of four colors.

Circle No. 207 on Reader Service Card.

Automatic Gas Valve



The Type 12V automatic gas valve, manufactured by Therm-O-Disc, Inc., has been designed for gas appliances. It operates silently on a thermal electric principle. A low voltage ac or dc electric heater causes a bi-metal blade to flex and quietly move a ball off a seat allowing gas to flow through the valve. The valve is certified by the American Gas Association as an automatic main gas control valve for use with natural, manufactured, mixed, liquified petroleum gases and LP gas-air mixtures. At nominal heater wattage of 4.6 watts, the 12V valve with 7/16-in. compression couplings or ⅜-in. pipe fittings has a rated capacity of 77,800 Btu's per hour based on



A SEALED THERMOSTAT FOR LESS THAN A DOLLAR!

New series covers all fixed-temperature applications where current is 10 amp, 120V, and 5 amp, 240V or less . . . and temperatures range between —65°F and 167°F

For a base price of only 79c, you can now apply dependable KLIXON SPST snap-acting, automatic-reset thermostats for four functions:

1. as temperature controls in refrigerators and freezers;
2. as high limit controls for refrigerator defrost termination;
3. as coil circuit controls in central air-conditioning systems.

No sacrifice of quality! KLIXON 20640 Thermostats, like all M&C controls, are Quality Certified. They are similar in all respects except height and capacity to the KLIXON 20420 Series now widely used in high-current commercial cooling, freezing and heating installations. Same dependable Spencer snap-acting bimetallic disc for clean, heavy-duty switching . . . located at the bottom of the cup for quick transmission of temperature change. Same reliable epoxy resin seal to exclude dirt and moisture. Same tamper-proof factory calibration for automatic cycling within specified opening and closing temperature tolerances. Minimum nominal temperature differential is 15°F.

Bulletin DD-COMT-6 gives complete data on electrical ratings, operating characteristics and design options. Write for your copy today.

METALS & CONTROLS INC.
6912 FOREST ST. • ATTLEBORO, MASS.
A CORPORATE DIVISION OF
TEXAS INSTRUMENTS
INCORPORATED

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1000 Btu's per cu. ft., .64 specific gravity gas for a pressure drop of one in. water column.

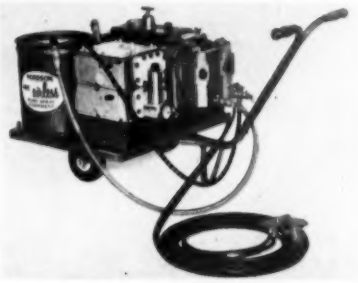
Circle No. 208 on Reader Service Card.

Primers For Plastisols

Development of two specialized primers for fusing vinyl plastisols to metallic and non-metallic surfaces has been announced by Dennis Chemical Co. Denflex No. 2394-1 White Primer bonds plastisols to metal to form coatings which are said to withstand immersion in cold or boiling water and exposures to conditions of high humidity.

Circle No. 209 on Reader Service Card.

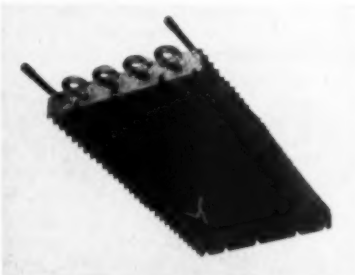
Hot Airless Spray Unit



The Nordson Corp. has announced a dolly-mounted hot airless spray unit known as the AP-6800. The compact, mobile model includes an AP pump together with two high pressure paint heaters and a filter. Provisions are made in the dolly to mount a standard five gallon bucket of paint. The unit is said to be of particular value where painting is done at several locations or where painting of heavy equipment is done on the open floor.

Circle No. 210 on Reader Service Card.

Off-Center Coil



An off-center coil, manufactured by Peerless of America, Inc., is designed for frost-free refrigerator, medium or low temperature application with aluminum or copper tubing, one or two rows deep with one-piece fin and with continuous one-piece tubing, eliminating welded joints. Varied fin spacing and fin heights as desired. Available with cable slots incorporated for electric defrost or hot gas tube circuit.

Circle No. 211 on Reader Service Card.

Use Reader Service Card (pages 63 & 64) to obtain product information or supplier literature.

NARDA to encourage greater OEM participation

At a November news conference, Jules Steinberg, executive vice president of the National Appliance & Radio-TV Dealers Association, announced plans for expanded educational efforts among its dealer membership. As a result of recent association decisions, it was also made quite clear that there will be greater opportunity for appliance and radio-TV manufacturers to play an important part in NARDA educational activities.

Two new sales assists for dealers were announced: (1) an attractive new window decal to mark the stores of association members; (2) a four-page, standard newspaper-size publication which will carry examples of current appliance and radio-TV advertising to the NARDA membership. According to Steinberg, "The basic purpose of the 'Appliance Advertiser' is to acquaint our member dealers as to what products are being advertised, how they are being advertised, and at what prices."

According to Steinberg, the service will be for the sole purpose of educating NARDA members as to what is being advertised, without editorial comment.

In discussing the association's philosophy, Steinberg said, "NARDA's philosophy is to educate its members so that they do become better appliance, radio-TV dealers. NARDA as an organization tries to steer clear of telling our dealers what to do."

One-day management clinics planned

In addition to NARDA's Institute of Management, 1962 will see the start of a series of one-day regional management clinics to be scheduled in various parts of the country. The first clinic has been tentatively scheduled for Denver, in February.

"The one-day management clinics," said Steinberg, "will be a composite of dealer development programs formulated by major manufacturers and the dealer. We have been working out a program which would be acceptable to all manufacturers — one which we think will be of great benefit to our members, especially those who cannot afford to travel great distances to attend a school."

OEM memberships encouraged

A recent association decision to open its membership to manufacturers on an "associate" basis points up the association's intention to combine the resources of manufacturers and dealers for cooperative educational activity. In answer to an MPM question concerning the relationship between NARDA and the manufacturers, Steinberg had this to say:

"When I moved into this job four months ago, I discovered that the cooperation from all segments of the industry was much greater than I had anticipated. That includes primarily manufacturers. I have yet to find a single manufacturer, large or small, full-line or single-line, who did not lean over backwards to help us and assist us in the formulation of our program for getting ideas across. We have had manufacturers willing to sit down with us and work out our one-day management clinics. There are a great many major manufacturers in the field who have dealer-development programs in which they have invested up to a quarter of a million dollars. They have placed these programs at our disposal, and have also placed their dealer development personnel at our disposal and offered to conduct management clinics on a 'no-sell' basis, strictly for us.

"Apparently they [the manufacturers] feel that whatever goes toward building a sound dealer structure will come back one way or another. They feel that an alert dealer organization in the United States is important to their welfare. Once such an alert dealer structure exists, they are then willing to take their chances to get that dealer's business."

NARDA expects to broaden its manufacturer participation just as rapidly as personal contacts permit.

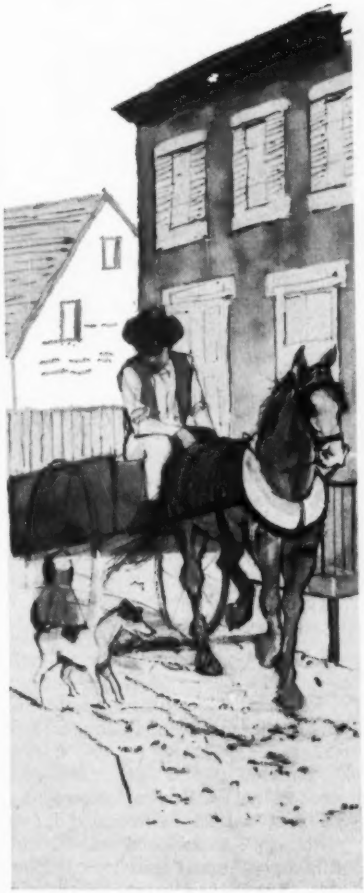
Manuacturers on 1962 program

NARDA's 1962 annual convention will be held January 7, 8, and 9 at the Edgewater Beach Hotel and the Merchandise Mart in Chicago. The theme will be "Dealer Profits." Among the key speakers for the annual convention are a number of representatives at the OEM level. Included are Frank Zimmerman, Ford Motor Co.; Sol Goldin, Whirlpool Corp.; Claire Ely, The Maytag Co.; W. H. Dennler, General Electric Co.; Kip Anger, Zenith Radio Corp.; and Jack Lee, Westinghouse Electric Corp.

Also listed on the speaking program are editors of leading merchandising publications, well-known dealers from various parts of the country, and J. F. Miller, managing director of the National Electrical Manufacturers Association.

Horse carts and buggy whips are gone. So are many of the enameling techniques and materials that used to be "standard." In the past few years changes in porcelain enameling have come fast and furiously ... low temperature firing, one-coat enamel and many others. Have you reviewed frit sources in terms of these new developments? Perhaps it's time for a change... Apec is ready to serve your "newest" needs ... complete field service facilities, modern laboratories, expanded production capability. And many enamelers have found that Apec can actually save them money ... why not look us over?

TIMES HAVE CHANGED



...and APEC is changing with the times

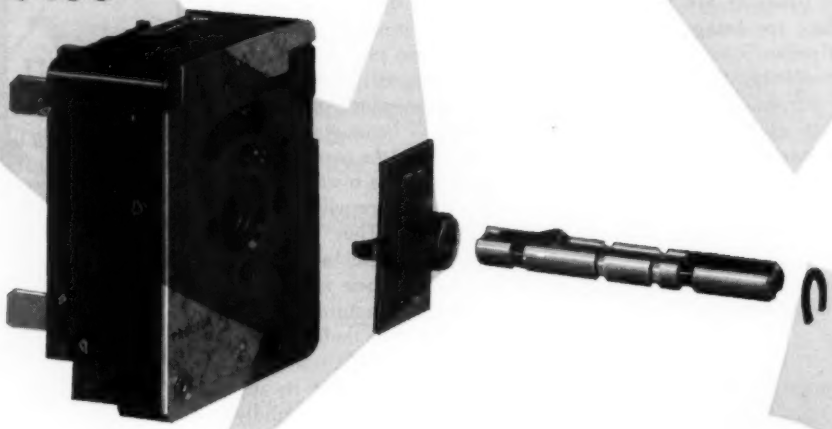
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american porcelain enamel company
1285 KEATING AVE. • MUSKEGON, MICH.
PHONE PO 6-4756
1-2

Circle No. 303 on Reader Service Card.

Faster Delivery

THE NEW PROCTOR VARITHERM INFINITE CONTROL WITH PLUG-IN-SHAFT

Speeds Factory Service



Delivery problems can be a headache for the Electric Range Manufacturer! But now Proctor provides a new, easy-to-take remedy, the exclusive "Plug-In-Shaft" Electric Range Control.

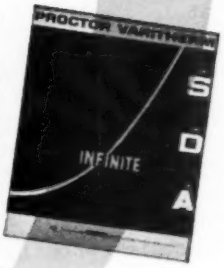
VARITHERMS . . . the *superior* infinite range controls . . . will now be assembled, checked, calibrated, tested and stocked, *without a shaft.* When you place your order, we draw from this stock, insert and lock in the shaft style you need, and ship, shortening delivery schedules by weeks!

If you use a threaded-sleeve mounting, that too is secured to the control when the shaft is installed. If not, four tapped mounting holes are already in the VARITHERM case for your selection.

It's so simple, we wonder why we didn't think of it before!

The real delivery and stockroom problems are caused . . . not by differing element wattages . . . but by variations in mounting, in shaft style and in cam program. The so-called all-purpose, all-wattage "infinites" do nothing to solve them . . . the VARITHERM with the plug-in-shaft does!

For full information, send for the new VARITHERM Bulletin, No. V-61.



P.S. *a product of* THE PROCTOR-SILEX *CORPORATION*
CONTROLS DIVISION • *4000 Coolidge Avenue, Baltimore 29, Md.*

Circle No. 338 on Reader Service Card.

MPM

new industrial literature

RUST AND SCALE REMOVER

A bulletin describing Everite, a fast-acting rust and scale remover, is available from The Diversey Corp. Diversey reports that Everite is ideal for removing rust from finely finished parts without etching or acting upon the metal surface and from metal surfaces being prepared for repainting. It will not change dimensions of forgings and castings, the bulletin states.

Circle No. 118 on Reader Service Card.

SUPERSTRONG SHIPPING CONTAINERS

Detailed case histories and unusual packaging applications are found in an illustrated brochure just published by the Wirebound Box Div., St. Regis Paper Co. Superstrong Shipping Containers are shown protecting products in shipment, with reusable wirebound pallet boxes for all kinds of materials handling applications getting considerable attention. Free copies of the brochure, headlined "Better Built For All 4 — Packing, Handling, Shipping, Storing," may be obtained without charge.

Circle No. 119 on Reader Service Card.

BETHNAMEL

A technical folder (No. 734) available from Bethlehem Steel Co. details the company's "zero-carbon" porcelain enameling stock. According to the folder, the company's open-coil annealing process reduces the final carbon content of the stock to about .001 percent, which results in stock that is easy to draw and weld. The literature also states that Bethnamel shows high resistance to reboiling and fishscaling.

Circle No. 120 on Reader Service Card.

TORC-PAC PRESSES

A line of Torc-Pac OBI presses manufactured by Clearing Div., U.S. Industries, Inc., is described and illustrated in recently published literature. The presses feature a Clearelease mechanism which makes it possible to "unstick" the equipment in a matter of minutes. A taper wrist pin in the press slide provides instant release.

Circle No. 121 on Reader Service Card.

PELLETIZING SERVICE

A new brochure describes and illustrates complete pelletizing service of the Nylok-Detroit Corp. The literature contains diagrams and data covering standard threaded part processing, and details on the firm's new process for inserting nylon pellets into all types of nuts and press-fit parts. Engineering recommendations and a design check list are also included.

Circle No. 122 on Reader Service Card.

BULLETIN ON COMBUSTION CATALYST

A technical bulletin issued by Harco Chemical Co. and describing Harco Combustion Catalyst is available. The bulletin covers combustion improvement and reduction of soot, scale and corrosion in all types of industrial boilers. By changing the time factor of combustion, the catalyst completes the combustion cycle to eliminate the deposition of soot and slag on the fire side of heating surfaces, and materially reduces stack emissions. The catalyst utilizes several complex metallic compounds in solution. These compounds exhibit a catalytic action when burned with industrial fuel oils or when introduced into coal feeding equipment of plants burning solid fuel.

Circle No. 123 on Reader Service Card.

STAINLESS STRIP STEELS

Publication of a completely new 32-page brochure on the company's Superior stainless strip steels is announced by Superior Steel Div., Copperweld Steel Co. The brochure provides a guide to correct selection of various stainless grades for specific applications. Data on the analyses, physical and mechanical properties, heat treating and finishing of 19 Superior stainless steel types are provided, plus visual presentations of applications in the architectural, household, automotive and other fields.

Circle No. 124 on Reader Service Card.

DATA PROCESSING BOOKLET

Redesigned and enlarged with additional data processing applications for its sixth edition, the Friden booklet, "IDP Products in Action," presents 32 pages of systems applications involving the company's tape-operated business machines. Friden machines, such as Flexowriter, Teledata, Collectadata, Add-Punch, and Computyper, are shown handling order-invoice, data collection, and other functions.

Circle No. 125 on Reader Service Card.

DIE TRYOUT PRESSES

Alpha Press and Machine, Inc. has released a catalog describing their line of standard rotary head die tryout presses. The catalog explains advantages of the Alpha design, which is said to make both die members accessible for finishing operations without disturbing tryout press setup.

Circle No. 126 on Reader Service Card.

FOAM BLENDER AND DISPENSER

Bulletin 612 published by PolyStructures, Inc. describes the Foamix Type 61 automatic blending and dispensing machine with self-cleaning head, for making polyurethane foams and other two-compartment-based compounds. The bulletin gives details of principle and method of operation, range of capacities and dispensing rates, calibration curves and accessories.

Circle No. 127 on Reader Service Card.

IMAGINEERING

A two-color folder, "Imagineering," which details the varied fastener line, design capabilities and operations of Screw and Bolt Corp. of America, is now available. Included in the folder are illustrations of more than 80 intricate "specials" which represent some of the thousands of fasteners the company has designed.

Circle No. 128 on Reader Service Card.

For further information on New Industrial Literature, use Reader Service Card on pages 63 and 64.

SPECIALTY FINISHES

Titanine Div., Seagrave Corp., has announced its new technical fact booklet of specialty finishes and government specifications. Intended as a file reference for purchasing agents and finishing engineers, the new publication offers a cross index of government specification listings as well as hundreds of suggestions for use of paints, lacquers and enamels.

Circle No. 129 on Reader Service Card.

WIRE DESIGN MANUAL

Case histories, cost saving ideas and other helpful information are featured in E. H. Titchener Co.'s new handbook, "Working Wonders with Wire." This year's edition, the fourth, has special interest for engineers in the electronics field. The tables of technical data and illustrated description of wire materials, wire forming, welding and finishing techniques make it a useful guide for designers and engineers in all fields.

Circle No. 130 on Reader Service Card.

WATER-SOLUBLE CUTTING LUBRICANT

A comprehensive data bulletin describes the characteristics, applications, and gives case history information on No. 472-MPA water-soluble cutting lubricant for all types of machine tools using high speed and carbide tooling. The lubricant, produced by Macco Products Co., is recommended for general machining of steel, machining of high carbon steels, and broaching and grinding. The manufacturer guarantees No. 472-MPA will not turn rancid under any circumstances.

Circle No. 131 on Reader Service Card.

ZVP GLAZE STAINS

Ferro Corp. announces C-415 Yellow and C-425 Orange Yellow ZVP (Zirconium-Vanadium-Praseodymium) Glaze Stains. They are said to be cleaner and brighter than most yellows, completely stable at lower temperatures (below Cone 8), and less subject to reduction (reaction in the kiln). Samples and complete information are available.

Circle No. 132 on Reader Service Card.

HEATING APPLICATION MANUAL

The Panelbloc Div. of the Bettcher Mfg. Corp. has announced publication of a 16-page infra-red heater application manual. It is titled, "Application of Panelbloc Infra-Red Heaters." The firm manufactures gas-fired infra-red heaters for commercial and industrial use.

Circle No. 133 on Reader Service Card.

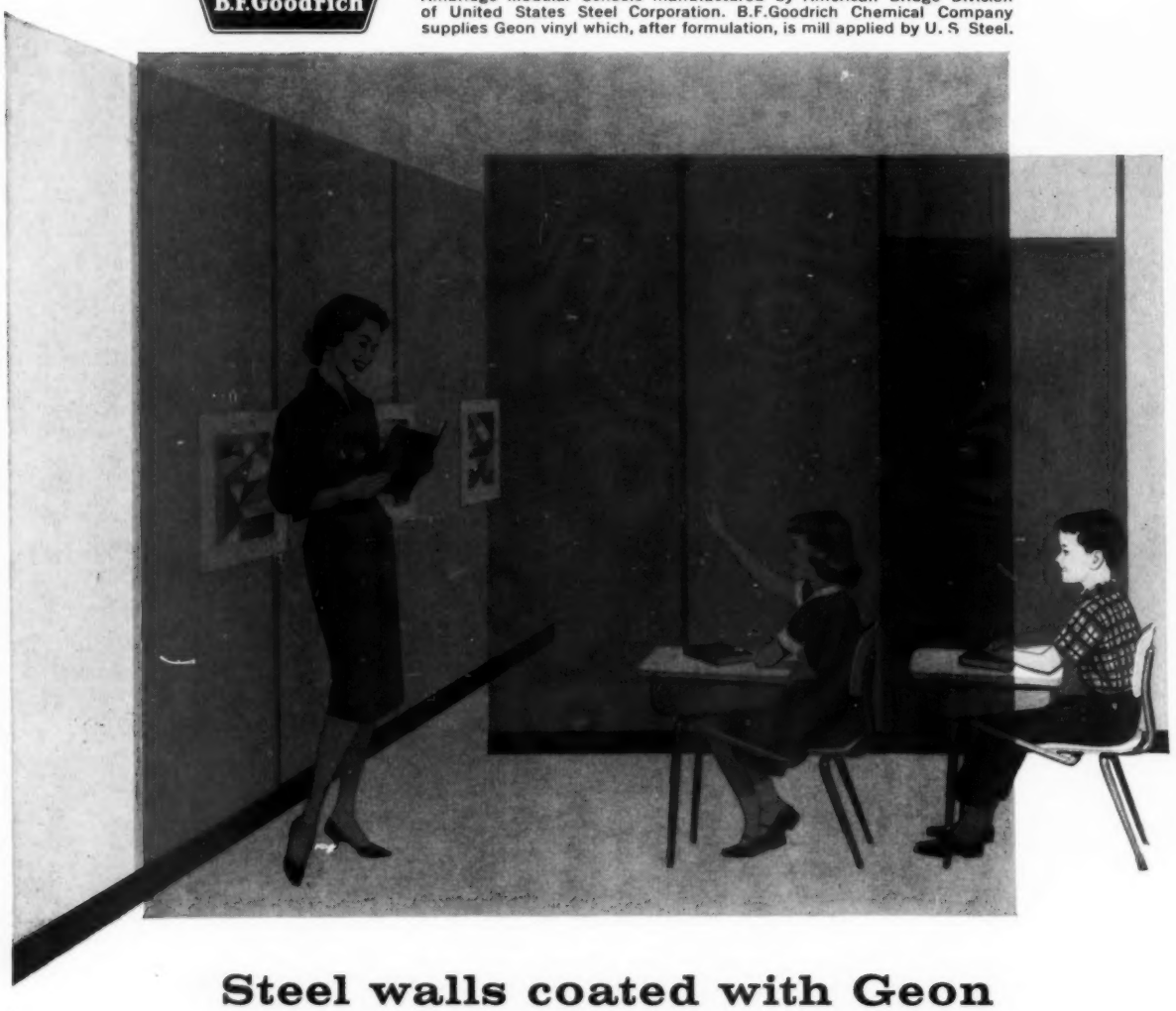
WELDING PROBLEMS

All-State Welding Alloys Co. has published a 60-page Application Manual giving more than 1000 uses for the firm's specialty

TO PAGE 72 →

B.F.Goodrich

These steel wall panels coated with Geon are one of the components in the Ambridge Modular Schools manufactured by American Bridge Division of United States Steel Corporation. B.F.Goodrich Chemical Company supplies Geon vinyl which, after formulation, is mill applied by U. S. Steel.



Steel walls coated with Geon teach schools a lesson in cost

It's a lesson that may save you money, too! Schools built with these wall panels need less costly foundations because of the lighter-weight walls. Teachers get more classroom space because panels are so slim. And maintenance is easier because they are coated with Geon vinyl.

The Geon coating is really rugged. It withstands toughest treatment, doesn't show the marring and scuffing of other materials. It's washable and comes in a variety of permanent, pleasing patterns and colors—not affected by sunlight or corrosive atmospheres.

This coating is tough—it is applied to steel *before* fabrication. Geon-coated steel can be sheared, slit, punched, lock seamed, stamped, drawn and otherwise fabricated by conventional means without damage to the surface. This Geon coating is ideal for any product made of sheet steel that can benefit from enhanced appeal and durability.

Here's another way that Geon improves products, opens new markets. For information, write Department NB-10, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.

B.F.Goodrich Chemical

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Geon VINYLS

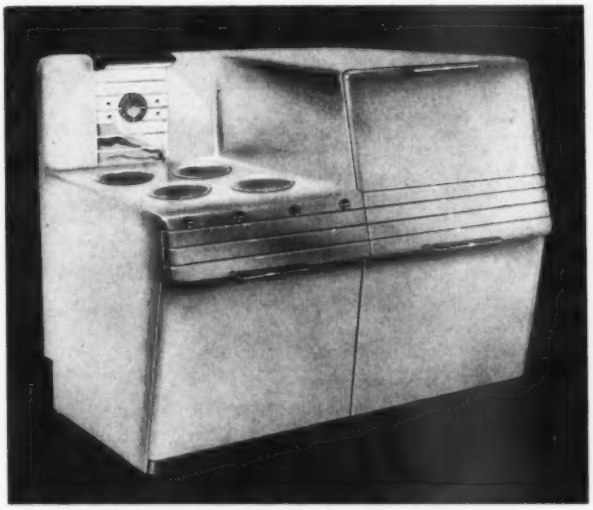
Circle No. 316 on Reader Service Card.

Evolution or revolution?

He had this to say concerning refrigerators *(in 1944)*:

"There is great room for improvement in household refrigeration. Most prewar models have large areas that are inaccessible without removing many articles, or the housewife must stoop uncomfortably to reach lower shelves. Some improvements have begun to be made in the way of racks on the insides of doors and drawers for vegetables and fruits.

"However, the basic flaws in former designs can not be remedied sufficiently by such minor improvements. Complete re-design from a functional standpoint is necessary, as well as re-engineering to take advantage of new materials and increased knowledge about thermodynamics. Present-day boxes are much too heavy, and most of them are unesthetic in appearance, if not downright eyesores. With their ungainly vertical structures and large doors swinging outward, they are difficult to fit into well-planned kitchen layouts.



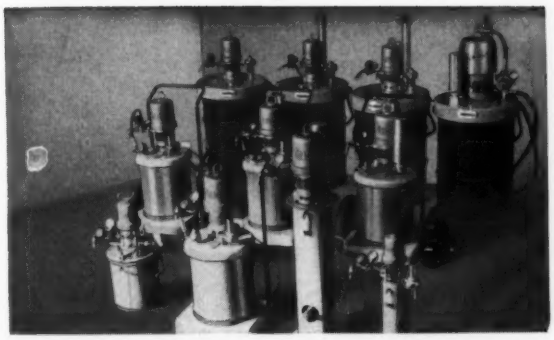
Oven is placed at convenient height. Automatic controls would enable housewife to cook entire meal while out playing bridge. Better engineering will provide increased efficiency, lower cost. Pleasing design will improve appearance of kitchen.

"The postwar refrigerator should have drawers at waist level, with shallow shelves from the top of the drawers up to eye level or a little higher. The lower portion of the cabinet should be given over to cool, dry storage space for articles for which there is only an occasional demand. The refrigerator cabinet should be sloped inward at the bottom or undercut at the base to provide comfortable toe-room when standing in front of it."

In his early article, Lippincott also had equally pertinent suggestions for home laundry equipment and components of the bathroom.

With this brief review, we republish two illustrations from the original 1944 article, together with the original captions. We suggest that MPM readers draw their own conclusions as to whether the past 18 years have brought evolution or revolution in home appliance design.——————————*MPM*

EDITOR'S NOTE: J. Gordon Lippincott was the principal in the firm of Dohner & Lippincott, New York City, at the time the 1944 article, "Appliances for Tomorrow," was prepared. The firm name is now Lippincott and Margulies, Inc. A later article, "Confusion in the Marketplace," appeared in the May 1957 issue of MPM.



Which of these new GRACO HYDRA-SPRAY models is designed to save YOU money?

Will a stationary or a portable model save you labor? Do you want to be able to change colors fast? Do you want a small unit or a large capacity assembly-line model?

Well, whatever your requirements, there's a Hydra-Spray designed to save you time, materials... *and money!*

Eleven models to choose from—stationary, portable or standpipe—5 gallon to 55 gallon capacities. And you can pick from a variety of different tip sizes that handle anything from protective coatings to fine finishes.

See your Graco Dealer Today!

FREE Send today for free Hydra-Spray catalog. All the specifications are listed for your convenience in choosing the *right* unit for you.

GRACO ENGINEERS & MANUFACTURERS / GRAY COMPANY, INC. 1226 Graco Square Minneapolis 13, Minnesota

See Phone Book Yellow Pages "Spraying" for Graco Suppliers

Circle No. 317 on Reader Service Card.

Please USE YOUR POSTAL ZONE NUMBER!

In an effort to improve service and speed delivery of mail, the Post Office Department asks that you always include your postal zone number in your address.

We wish to cooperate in every way we can — but we need your help. By giving us your zone number, you'll assure yourself of speedy delivery of your magazines.

Help yourself to better service. USE YOUR POSTAL ZONE NUMBER — on all your correspondence!

METAL PRODUCTS MANUFACTURING

EXPAND

your product line with 1000° lead frits



Growing bigger and bigger is the array of saleable new products you can offer with the time-proved durability and eye-appeal of porcelain enamel finish. Low-temperature lead frits now make this superior finish practical on metals of lighter gauges, more highly complex shapes than possible ever before.

In fact, stock too thin to be coated satisfactorily with ordinary enamels can now be porcelain enameled without warping. Sharp corners and radii present no problems.

Lower-temperature firing means far lower initial cost of furnaces, plus continuing savings on fuel and maintenance.

You can apply 1000° lead frits, in thinner coats, resulting in lower stresses during firing. And you need not use enameling grade steel. Cold-rolled steel does just as well!

Why not be first on the market with *your* kind of product in the tough, even, colorfast finish of genuine porcelain enamel. For full technical information on 1000° lead frits, write Lead Industries Association, 292 Madison Avenue, New York 17, New York.

LOOK AHEAD WITH LEAD

3139

Reader Service

VANE-TYPE PUMPS

Tuthill Pump Co. has issued a brochure describing the company's line of Model W water pumps. The vane-type pumps are designed particularly for use in drink vending machines, carbonators and similar applications. They are also applicable for all water pump requirements in their capacity range — approximately 35 to 100 gph at 100 psi differential.

Circle No. 101 on Reader Service Card.

ROAST CONTROL

An automatic Roast Control manufactured by King-Seeley Div., King-Seeley Thermos Co., is described in Bulletin 3141. According to the bulletin, the control allows the housewife to set the range control, leave the house, and return to a roast prepared correctly — at the right temperature for serving.

Circle No. 102 on Reader Service Card.

REINFORCED PLASTIC PARTS

A four-page bulletin showing design possibilities for molding parts of reinforced plastics with electric heaters integral has been published by Bischoff Chemical Corp. The bulletin describes various types of laminations, typical molded parts and gives performance curves for different laminations and electrical inputs.

Circle No. 103 on Reader Service Card.

PNEUMATIC TIMER

A miniature pneumatic timer manufactured by Hagen Mfg. Co. is detailed in Bulletin 1630. According to the literature, the timer is a versatile unit, with an adjustable delay range of .2 second to 20 seconds. It has an operating temperature range of 32 to 120 F.

Circle No. 104 on Reader Service Card.

NACROMER AND MURANO

Nacromer, a synthetic pearl essence, and Murano, a synthetic pearl available in colors, are described in a Nacreous Pigment Handbook issued by The Mearl Corp. The materials are used for entire surfaces, trim or nameplates.

Circle No. 105 on Reader Service Card.

INDUSTRIAL WIRE CLOTH

A new catalog describing engineering considerations for proper application of industrial wire cloth is available from Reynolds Div., National-Standard Co. The handbook contains a glossary of terms, description of weave types, mesh size vs. open area tables, application principles, etc.

Circle No. 106 on Reader Service Card.

METAL FINISHING

Turco Products, Inc. has available a comprehensive metal finishing brochure titled "Specialized Chemical Processing Compounds for the Metalworking Industry." The illustrated booklet contains specific information for the use of each of the 43 products that make up the company's standard line of cleaning and processing

Use these postage-free cards to request:

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- **YOUR OWN SUBSCRIPTION TO MPM***
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compounds for the metalworking industry. Among the chemical processes discussed in the brochure are cleaning, phosphating, conversion coatings, protective coatings, paint and carbon removing, descaling, rust removing and prevention, inspection, processing aluminum and maintaining paint department and other plant areas.

Circle No. 107 on Reader Service Card.

PRESS CATALOG

Catalog G-60 published by Verson Allsteel Press Co. describes representative models of the company's entire line of mechanical and hydraulic presses and press brakes.

Circle No. 108 on Reader Service Card.

"THERMO-MAGIC" OVEN CONTROL

Full details on the Thermo-Magic oven control produced by Lux Time Div., Robertshaw-Fulton Controls Co., are contained in recently published literature. The oven control system reportedly makes it possible to control cooking precisely and to keep the food at a desired temperature for hours.

Circle No. 109 on Reader Service Card.

AVAILABLE PRODUCTION FACILITIES

A 12-page brochure describing specialized production facilities available to manufacturers has been produced by Danly Machine Specialties, Inc. The book describes Danly's welding, machining, assembly, engineering and other facilities which have been utilized by the Atomic Energy Commission, Naval Ordnance Laboratory and National Aeronautics and Space Administration, as well as several other industries. According to Danly, the facilities at its 700,000-sq-ft Chicago plant are geared to handle a complete range of manufacturing jobs, from the production of small, precision parts and controls to the fabrication of machinery weighing hundreds of tons.

Circle No. 110 on Reader Service Card.

FASTENING PRODUCTS

A 32-page booklet listing, illustrating and classifying its full line of fastening products has been published by Albany Products Co. Over 25,000 different sizes, styles and types are listed, in stainless steel, aluminum, brass, bronze and Monel. Over 15,000 of the items are regularly inventoried.

Circle No. 111 on Reader Service Card.

SMALL GEARING GUIDE

Small gearing for critical applications are described in a bulletin issued by Gear Specialties, Inc.

Circle No. 112 on Reader Service Card.

CERAMIC MILL JARS

Ceramic mill jars especially designed for laboratory use are described and illustrated in a catalog published by McDanel Refractory Porcelain Co. The jars are available in quart, gallon and two-gallon sizes, equipped with rubber or neoprene gaskets.

Circle No. 113 on Reader Service Card.

BUFFING COMPOUND REMOVER

"Buff-Off," manufactured by Cowles Chemical Co., is explained in a recently published brochure. The material is used to remove buffing compound from zinc die castings or other non-ferrous metals. According to the brochure, Buff-Off will not etch or darken the metal.

Circle No. 114 on Reader Service Card.

BURNING TOOLS

A Burning Tool Booklet published by Ferro Corp. details a large inventory of cast tooling patterns available. The booklet details the five factors which were considered in designing the tools: weight, size and shape of part; type of furnace; firing temperature; rolled or cast alloy design; and minimum-weight sections.

Circle No. 115 on Reader Service Card.

CARGOTAINERS

An eight-page bulletin describing Cargotainers, metal storage and handling baskets, is available from Tri-State Engineering Co. The literature describes structural features, applications, and gives several case histories.

Circle No. 116 on Reader Service Card.

PAINT FINISHING SYSTEMS

Paint Finishing Bulletin No. PF 401, published by J. O. Ross Engineering, details the company's complete line of paint finishing equipment. Included in the description are systems consisting of metal preparation units, spray booths, flow coat units, dry-off ovens, air make-up units, air heaters, conveyors and air conditioning units.

Circle No. 117 on Reader Service Card.

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MPM

Industry meetings

AUTOMATIC MERCHANDISING

The National Automatic Merchandising Association's 1961 Western Conference and Exhibit, Ambassador Hotel, Los Angeles, Calif., December 1-3, 1961.

APPLIANCES & RADIO-TV

The National Appliance & Radio-TV Dealers Association's Annual Convention, Edgewater Beach Hotel, Chicago, Ill., January 7-9, 1962.

HOME FURNISHINGS

International Home Furnishings Market, The Merchandise Mart, Chicago, Ill., January 8-17, 1962.

HOUSEWARES

The National Housewares Manufacturers Association's Housewares Exhibit, McCormick Place, Chicago, Ill., January 15-19, 1962.

ENGINEERING, MAINTENANCE

National Plant Engineering & Maintenance Show, Convention Hall, Philadelphia, Pa., January 22-25, 1962.

INDUSTRIAL PREPAREDNESS

The American Management Association, Inc.'s Meeting, "Industrial Preparedness — Planning for Corporate Continuity and Survival," Hotel Astor, New York City, N. Y., January 31-February 2, 1962.

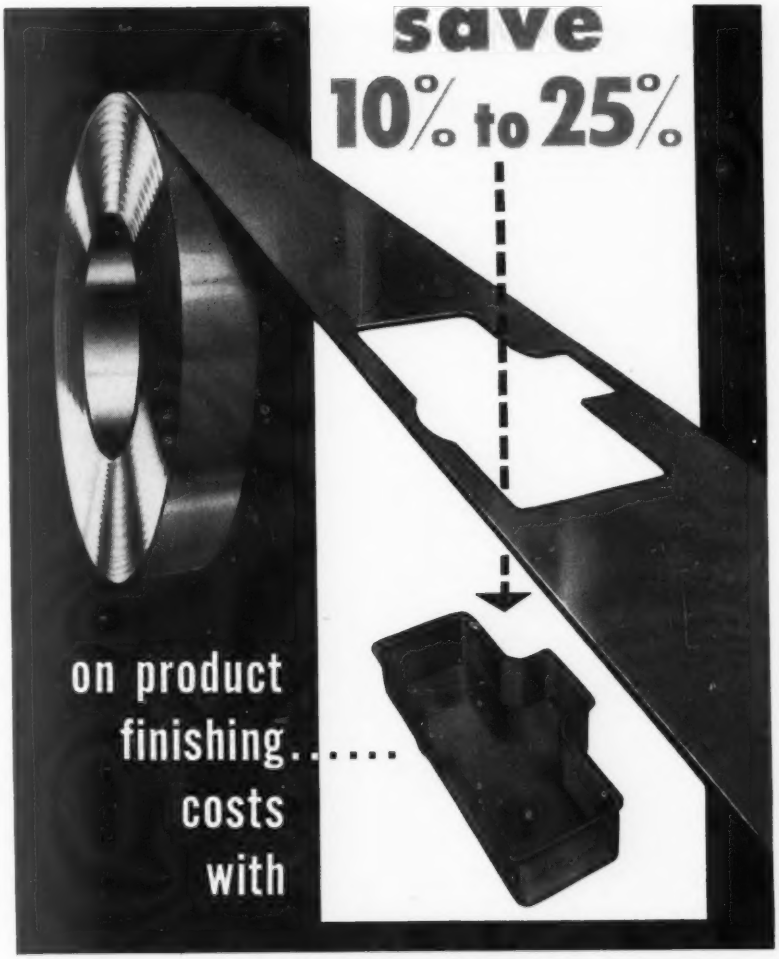
AIR-CONDITIONING, HEATING

The 12th Exposition of the Air-Conditioning, Heating and Refrigeration Industry, Great Western Exhibit Center, Los Angeles, Calif., February 12-15, 1962.

Chicago Business Machine Show will be Largest

The Chicago Business Equipment Exposition, set for McCormick Place next April 9-13, will be the largest to date in the series of expositions, according to its sponsor, the Business Equipment Manufacturers Association.

The exposition will occupy about 3½ acres of the exhibit hall, and exhibit space is already more than 95 percent committed. During its five-day run, more than 70 leading foreign and domestic manufacturers will display nearly $30 million worth of the latest products for every facet of business management operations. An estimated 40,000 business executives from all parts of the United States and from many foreign countries will attend.



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Cut metal product finishing costs as much as 10% to 25% by using steel or aluminum coils or sheets *already pre-coated* by Pre Finish Metals, Inc., specialists in applying custom-formulated finishes! Precoating also assures a more uniform, better quality, more durable finish for either functional or decorative use.

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Circle No. 337 on Reader Service Card.

Mobile home appliances discussed at third Western Appliance Technical Conference

THE THIRD Western Appliance Technical Conference sponsored by the Los Angeles Section of American Institute of Electrical Engineers' Domestic Appliance Subcommittee was divided into two sessions: "Dividend Engineering" and "Mobile Home Appliances."

The one-day meeting, held recently at the Biltmore Hotel, Los Angeles, also included an evening panel discussion with audience participation.

At the morning session, speaking on "Value Engineering," L. D. Miles of General Electric defined "value," as applied to a product or service, in this way: ". . . the field of performance engineering has for its objectives the reliable achievement of overall performance, service, maintenance, life and other factors which the customer has learned to want."

"The time has come," he said, "for all of us in manufacturing and engineering not only in the appliance but in all industrial and military business to set for ourselves economic specifications which are as severe as the technical specifications we have always set and through the new technology of value engineering to meet them."

Donald MacDonald of Owens-Corning Fiberglas Corp. related his views of dividend engineering: "The dividend engineering approach is loaded with opportunity for all of us. With rising costs and the present squeeze on profits, it is vital that every engineer and designer apply the dividend engineering concept to each decision if his firm is to maintain or increase return on investment."

Through actual examples, MacDonald demonstrated how his firm utilizes the dividend engineering concept through every step of a program's development.

Underwriter' Laboratories, American Gas Association and National Electrical Manufacturers Association were among the groups represented in the session on mobile homes. In addition, Russell R. Bahr of the California State Div. of Housing, H. Kent Glenn of the Southern California Edison Co., and E. E. McRill, Los Angeles park developer, were on the program.

Herbert Witte of Underwriters' detailed his agency's standards and specifications relating to mobile homes and electrical, heating and plumbing systems. He also explained the Laboratories' follow-up program to check manufacturers' production methods and tests to make certain that specified standards and procedures are being maintained.

H. P. Michener of NEMA's Engineering and Safety Regulations Dept. discussed the work several groups have been doing to provide standards for the electrical as well as other features of mobile homes and travel trailers. "Completion is not yet here," he said, "but it is in sight and a little more concerted effort should bring it to pass. It is particularly appropriate and important that any standards for mobile homes and travel trailers be truly national and be uniformly applied throughout the country."

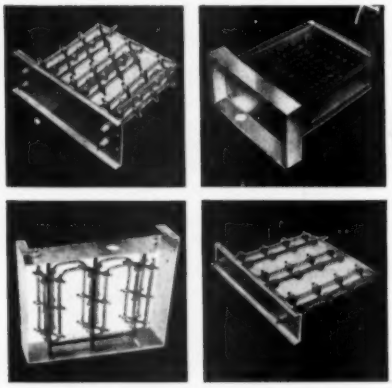
Michener said the development of these nationwide standards are particularly important when it is considered that the mobile home and travel trailer industry may account for nearly 8 to 10 percent of the new homes produced in the past few years.

Gas appliances for mobile homes was the subject explored by Pieter Root, Jr., assistant to the director, AGA laboratories. He said approval standards for gas heating equipment, cooking appliances, refrigerators and clothes dryers have been prepared and are available to "assure safety and satisfactory performance of gas equipment designed for installation in mobile homes or travel trailers." Root went on to explain how these standards differ from specifications for conventional gas appliances.

Root emphasized that "continued correlation between the various code making agencies and the approval agencies is . . . not only desirable but essential."

Following the morning and afternoon sessions, an evening session was held to hear McRill present his views on the industry. The program concluded with an open discussion session on the mobile home topic, at which views were aired on various facets of mobile home design and safety standards.

Jack Shnable, Controls Co. of America, was general chairman of the conference.



CROSS-SECTIONAL VIEW OF NEW TEP INSULATOR AND CROSS-BAR DESIGN.



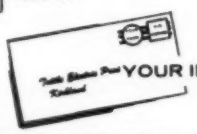
More space for air circulation assures better heat dissipation, longer wire life. Another result of TEP research.

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Lowe Brothers has the complete line of standard industrial finishes you'd expect from a company that's been an important name in this business since 1870. But more and more today, manufactured items of all types require specially developed finishes . . . or variations in standard formulas to fit special finishing problems. Lowe Brothers shines here, too.

Modern laboratories, precision testing equipment and proved testing techniques, skilled technicians, strict quality control methods—all these and more back up the products that bear the Lowe Brothers brand. And—somewhere near you—there's a Lowe FINISHING ENGINEER ready whenever you are to talk to you about your specific finishing problems including finishing systems. Send the coupon.

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Circle No. 325 on Reader Service Card.

Announcing! A SPECIAL SECTION devoted to AIR-CONDITIONING, HEATING AND REFRIGERATION



MPM will focus a spotlight on this important industry by publishing a special section devoted to air conditioning, heating and refrigeration in the February 1962 issue. The February issue will reach the desks of key men throughout the air conditioning, heating and refrigeration industry the 1st of February, just prior to the 12th National Exposition of the Air-Conditioning, Heating and Refrigeration Industry to be held in Los Angeles, February 12-15, 1962.

This "pre-show" special section provides an excellent opportunity for your company to present its sales message to key men in every plant in the United States engaged in producing air conditioning, heating and refrigeration equipment.

The editorial scope of the section will include a preview of the Exposition and the accompanying Technical Sessions, design engineering features, statements from industry leaders, and descriptions of new products that will be shown at the Exposition.



Take steps now to be sure that:

1. Complete information and glossy photos of your new product items are sent to the MPM editorial department. Closing date for editorial material is December 22.
2. Your advertising agency is notified well in advance so that proper space reservations can be made and advertising material prepared. Closing date for complete advertising plates is January 10.

DANA CHASE PUBLICATIONS, INC.

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Established 1944

New type flow coating machine for refrigerator liner interiors

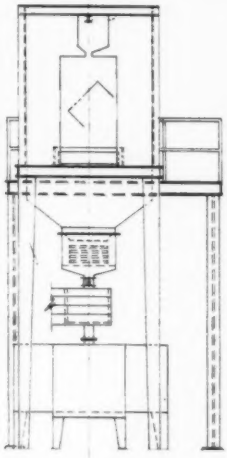
equipment suitable for both cover coat and ground coat

THE APPLICATION of porcelain enamel on refrigerator liners (tanks) by flow coating has been the subject of study in the porcelain enameling industry for some time. The flow coating of appliance parts (inside and out) has been successfully accomplished in many plants, and case histories have been reported in MPM. The equipment described here, however, is designed for the application of cover coat enamel on refrigerator liners — inside only.

The Frit Division of Ferro Corp., Cleveland, Ohio has just announced the successful completion of a one-year development program involving both equipment and techniques for the application of cover coat to the inside of refrigerator liners.

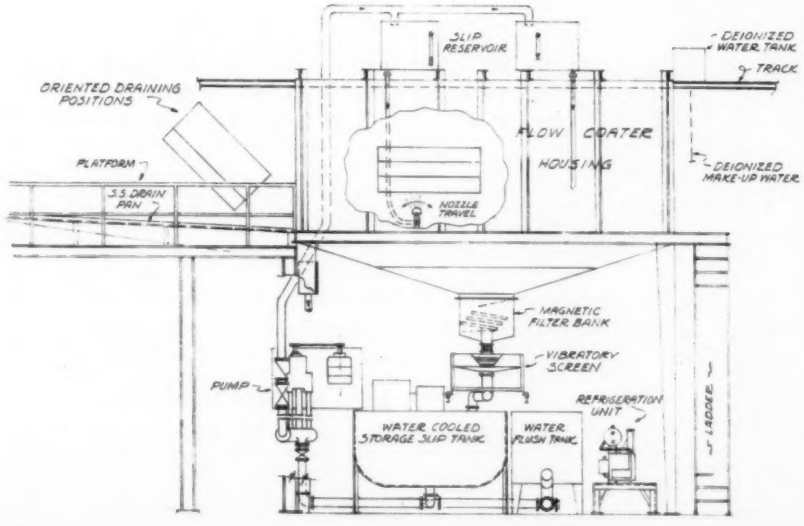
Ferro engineers state that it was determined as early as a year ago that the theories relating to the success or failure of flow coating cover coat could only be successfully explored and proven in full-scale equipment. Plans were made to install a unit capable of handling all existing sizes of refrigerator liners. Basic equipment, including preconceived ideas and predetermined requirements, was completed in March 1961. Trial runs immediately indicated the faults in the original conception, and extensive changes were made. From this point, Ferro technicians report a steady progress in the quality of cover coating results, with liners of commercial quality being produced in July. They report that liners of many sizes and by several manufacturers have been successfully flow coated.

In addition to the flow coating of cover coat, the Ferro report states that as an extra dividend the equipment will be used to produce further savings of material in flow coating ground coat.



The new flow coating machine includes a full scale flow-coat booth, enamel storage tank, enamel return system and pump. The conveyor and tooling are reduced to a minimum. Electric eye timing is arranged to activate the flow nozzle stage.

For additional information, Circle No. 150 on Reader Service Card.



THE MAGNUS METHOD

For more than 40 years, Magnus Chemical Company has maintained its leadership in the cleaning field by offering this unique time-and-cost-cutting combination:

CLEANING CHEMICALS

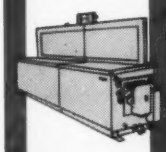
Over 300



Magnus produces a complete line of specialized chemicals — formulated to work independently in solving your cleaning problems or in perfect combination with:

CLEANING EQUIPMENT

Over 100 Types



Magnus also manufactures more than 100 types of automatic and semi-automatic cleaning machines, each designed specifically to work with Magnus chemicals to produce better cleaning results at lower cost.

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Because of its complete selection of chemicals and equipment, Magnus Sales-Service Representatives are free to recommend the method best for you . . modern methods to meet modern problems.

SEND FOR FREE SURVEY FORM

Magnus will assess your cleaning operation — without obligation — and show you how to cut costs and speed production in your individual shop.

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Circle No. 327 on Reader Service Card.

METAL PRODUCTS STATISTICS

		1961 (Units)	1960 (Units)	% Change
Gas Furnaces	Sept.	109,300	103,600	+ 5.5
	Jan.-Sept.	679,300	670,100	+ 1.4
Gas Boilers	Sept.	19,294	18,600	+ 3.7
	Jan.-Sept.	111,503	104,662	+ 6.5
Gas Conversion Burners	Sept.	17,800	22,100	-19.5
	Jan.-Sept.	81,700	96,600	-15.4
Oil-Fired Central Heating Equipment	Aug.	51,471	53,851	- 4.4
	Jan.-Aug.	301,729	313,847	- 3.9
Gas Ranges, Free-Standing	Sept.	155,200	144,200	+ 7.6
	Jan.-Sept.	1,083,500	1,123,500	- 3.6
Gas Ranges, Built-In	Sept.	35,600	34,400	+ 3.5
	Jan.-Sept.	260,400	259,600	+ 0.3
Gas Water Heaters	Sept.	191,900	227,600	-15.7
	Jan.-Sept.	1,923,300	2,116,400	- 9.1
Gas Vented Recessed Wall Heaters	Sept.	36,500	39,700	- 8.1
	Jan.-Sept.	240,000	262,200	- 8.5
Gas Floor Furnaces	Sept.	12,100	14,100	-14.2
	Jan.-Sept.	52,100	61,900	-15.8
Gas Direct Heating Equipment	Sept.	128,500	150,500	-14.6
	Jan.-Sept.	699,800	866,400	-19.2
Gas Unit Heaters & Duct Furnaces	Sept.	14,500	15,400	- 5.8
	Jan.-Sept.	107,100	111,800	- 4.2
Gas Incinerators	Sept.	3,800	3,900	- 2.6
	Jan.-Sept.	28,800	32,900	-12.5
Electric Household Refrigerators	Sept.	316,500	290,700	+ 8.9
	Jan.-Sept.	2,647,700	2,709,300	- 2.3
Electric Farm & Home Freezers	Sept.	38,905	38,500	+ 1.3
	Jan.-Sept.	356,405	367,140	- 2.9
Electric Ranges, Free-Standing	Sept.	81,900	82,000	—
	Jan.-Sept.	644,300	652,500	- 1.2
Electric Ranges, Built-In	Sept.	68,400	62,000	+10.3
	Jan.-Sept.	528,200	509,600	+ 3.7
Electric Water Heaters	Sept.	76,000	71,000	+ 7.0
	Jan.-Sept.	571,000	553,800	+ 3.1
Electric Dishwashers	Sept.	56,400	56,000	+ 0.7
	Jan.-Sept.	430,600	417,100	+ 3.2
Electric Food Waste Disposers	Sept.	90,900	76,300	+19.2
	Jan.-Sept.	609,000	581,600	+ 4.7
Dehumidifiers	Sept.	34,000	11,100	+206.3
	Jan.-Sept.	360,000	391,300	- 8.0
Combination Washer-Dryers	Sept.	9,717	17,824	-45.0
	Jan.-Sept.	76,115	118,895	-36.0
Washers—Automatic & Semi.	Sept.	323,336	279,304	+16.0
	Jan.-Sept.	1,970,636	1,913,304	+ 3.0
Washers—Wringer & All Other	Sept.	78,526	73,407	+ 7.0
	Jan.-Sept.	516,175	556,267	- 7.0
Electric Dryers	Sept.	105,404	106,130	- 1.0
	Jan.-Sept.	504,528	538,380	- 6.0
Gas Dryers	Sept.	57,453	59,378	- 3.0
	Jan.-Sept.	261,608	287,424	- 9.0
Metal Furniture	Sept.	*	*	+ 4.0
	Jan.-Sept.	*	*	-13.0
Vacuum Cleaners	Sept.	302,229	301,935	+ 0.1
	Jan.-Sept.	2,384,577	2,487,986	- 4.2
Typewriters	Sept.	116,020	*	*
	Jan.-Sept.	816,978	*	*
Room Air Conditioners	Sept.	38,500	22,400	+72.0
	Jan.-Sept.	1,369,200	1,378,100	- 0.6
Unitary Air Conditioners (1)	Jan.-June	199,556	*	+ 8.0
Steel Barrels & Drums	Aug.	2,917,183	2,724,199	+ 7.1
	Jan.-Aug.	20,984,140	20,520,500	+ 2.3
Steel Pails	Aug.	7,212,989	7,530,600	- 4.2
	Jan.-Aug.	51,851,624	50,351,233	+ 3.0

(1) Including heat pumps

* Not reported

Figures represent manufacturers' shipments or sales.

Sources for this information: Gas Appliance Manufacturers Association, National Electrical Manufacturers Association, American Home Laundry Manufacturers Association, Vacuum Cleaner Manufacturers Association, National Association of Furniture Manufacturers, Electronic Industries Association, Air-Conditioning and Refrigeration Institute, and U.S. Dept. of Commerce.

NEMA

→ FROM PAGE 17

Record business levels forecast

In his annual report, retiring President Fraser forecast a record level of sales for electrical products. Shipments are expected to reach approximately $25 billion in 1962, compared to a previous all-time high of $23.5 billion (shipments) set in 1960. The report forecasts a ten percent increase in value of shipments in '62 over '61, five percent for electronics, and four percent for consumer products.

The association's operating budget for 1962 is in excess of $1,600,000.

Attorney Samuel W. Murphy, Jr. warned the electrical industry that the U. S. Department of Labor will proceed, under the Walsh-Healey Act, against the electrical manufacturing industry. "It will deal separately with various product classifications," he said, "and there is every reason to believe that the proceedings will be carried to completion." It was pointed out that (labor cost) advantages to be gained by moving plants to the South could be readily wiped out.

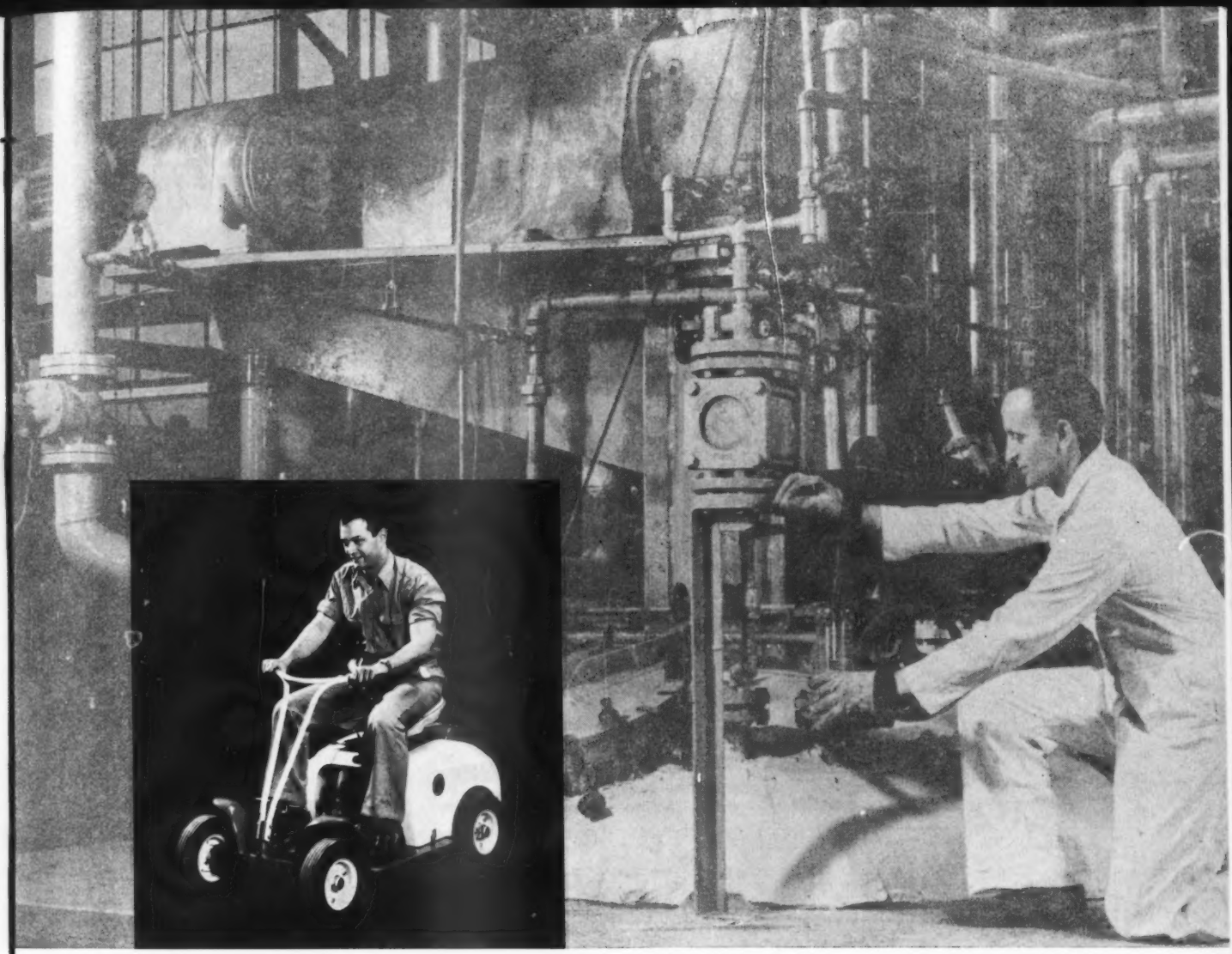
U. V. Muscio, executive vice president, Fedders Corp., and chairman of the association's Room Air-Conditioner Certification Program, referred to the program as an achievement in business statesmanship and said he believes the method established for verifying performance ratings will serve as a guide for similar programs in a variety of consumer-product and industrial fields.

New p-r program underway

R. H. Smith, secretary, The Reliance Electric and Engineering Co., and chairman of the association's public relations committee, said he believed that: "Unless business, at all levels, takes the initiative to define its objectives clearly and accurately on a positive, continuing basis, it is inevitable that customers, employees and the general public will lose faith in the free enterprise system."

This group, which for years was cold to the representatives of the press and to "publicity" concerning its operations, now has a positive approach to the problem of education and publicity. Films, conferences and printed and visual aids will be used to build a new "picture" of the industry both directly and through individual association members.

One 30-minute movie and slide film (wide screen) presentation traces the industry from the first Edison lamp to the present and on into the "space ship" future which will include thermoelectric (silent) lawnmowers and outboard (boat) propulsion.——MPM



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A finish equal in life and durability to all the other "parts" of your assembled product . . . this is the goal for the finishing materials formulated and produced specifically for you by Glidden.

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The complete line of Glidden solvent and water-reducible finishing systems includes alkyds, acrylics, epoxies . . . all resin types.

Bring your finishes problems to Glidden, by letter or by phone.

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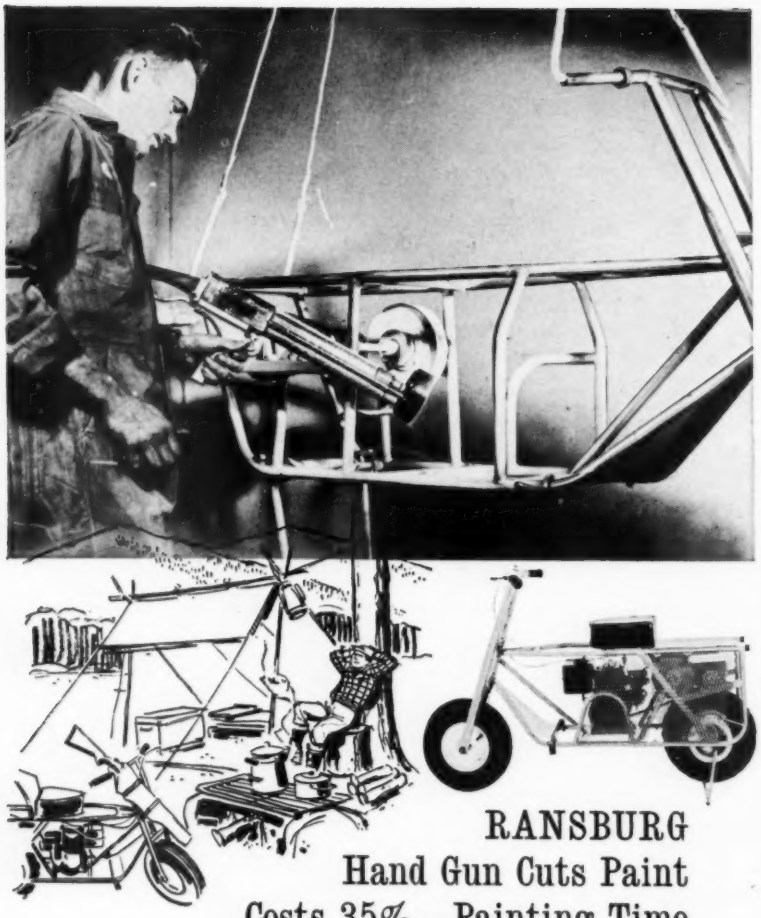
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RANSBURG
Hand Gun Cuts Paint
Costs 35%—Painting Time
25% Over Former Flo-Coat in the
Production of TOTE GOTE Cycles

Continually searching for better and faster manufacturing methods, the Bonham Corporation, Provo, Utah, switched from flo-coating to Ransburg Electrostatic hand spray to paint their Tote Gotes. The Tote Gote is an "off-highway" cycle, especially popular with hunters and fishermen who use it to travel over rough and rugged terrain not readily accessible by highways and roads.

Now, with electrostatic spray painting, Bonham is getting an improved uniform coating . . . a 35% savings in paint cost . . . and painting time is cut 25%. And this over flo-coat!

The predominately tubular construction of the Tote Gote makes it particularly adaptable for painting with the Ransburg No. 2 Process Hand Gun. That's because the "wrap-around" feature of electrostatic painting covers all such areas from one side only.

NO REASON WHY YOU CAN'T DO IT TOO

See how the Ransburg Electrostatic Hand Gun can save time . . . paint . . . and cut costs in YOUR finishing department. Or, if your production justifies, it will pay you to investigate Ransburg's automatic electrostatic spray painting equipment. Send for our No. 2 Process brochure which cites numerous examples of modern production painting in both large and small plants.

RANSBURG

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Box 23122, Indianapolis 23, Indiana

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Circle No. 340 on Reader Service Card.

23rd PEI Forum

→ FROM PAGE 32

uct engineering, reported on the progress the industry is making in developing new markets for porcelain enamel. In the automotive exhaust system market, the most significant use is by American Motors. All mufflers and tailpipes on 1961 models were "ceramic armored," as will be all exhaust systems in 1962 models.

Ford Motor Co. is equipping one model in their line with porcelain enameled mufflers, Pierce reported. The vehicle is known as the "Ford Falcon Sedan Delivery," a Falcon station wagon modified with steel panels in the back and equipped with only one seat.

In the replacement muffler market, Sears is offering 12 models which are porcelain enameled and, according to Pierce, this figure will soon jump to 29. Montgomery Ward has about 12 models of ceramic coated replacement mufflers on the market.

Other firms producing porcelain enameled mufflers are Powell Muffler Co. and Rayco Corp.

Pierce also reported on the first farm tractor manufacturer to use ceramic coated mufflers on their equipment. Massey-Ferguson is marketing a new diesel tractor called the "Super 90," with a porcelain enameled muffler as standard equipment. _____ *MPM*

New literature

→ FROM PAGE 59

alloys for all types of welding, brazing and soldering of conventional metals. Bronze, copper, stainless steel, cast iron, magnesium and aluminum joining are among the numerous applications listed. Fourteen major industries, with 41 sub-divisions which use joining alloys, have been surveyed over a five-year period to provide application data for more than 100 of the company's products.

Circle No. 134 on Reader Service Card.

METAL FINISHING, PLATING

A six-page brochure, entitled "Chemical Products and Proccesses for Metal Finishing from Enthonics" and describing their diversified line of metal finishing processes, plating chemicals and equipment, has been published by Enthone, Inc., subsidiary of American Smelting and Refining Co.

The check list introduces new product lines for steam cleaning and chemical plating. Additionally, it briefly describes the many other Enthone products for finishing of aluminum, blackening and coloring of metals, rust and scale removal, metal stripping, inhibiting of rust and tarnish, stripping of organic finishes, and metal cleaning and degreasing.

Circle No. 135 on Reader Service Card.



MPM

editor's mail

Raise wages, but hold line on prices

Gentlemen: Just recently President Kennedy told the steel industry: "It's OK to raise wages, but don't raise prices." I say it's a good trick if you can do it, but here are some facts to consider.

You can't pay higher wages each year without raising prices unless you increase production each year. And you can't increase production each year (using the same number of workers) unless you use automation.

So therefore, the astonishing facts are, the top union leaders and even our President himself are forcing automation on industry.

Ed. Batzner
3714 W. Center St.
Milwaukee, Wis.

Standardization — vital and complex

Gentlemen: I have read with considerable interest the articles appearing in MPM on standardization and I believe I have a better understanding now of the kinds of standardization you are attempting to promote. I believe I expressed my opinion in Chicago that I would be opposed to the standardization philosophy which would tend to promote the utilization of like parts by different laundry equipment manufacturers if, in doing so, such standardization leads to quality compromises or the sacrifice of individuality in the products.

This is a vital subject and a very complex one. It has so many ramifications that it may involve nearly every division of an appliance manufacturer. Within our plant we call one phase of this problem "Interchangeability" rather than standardization. In the Service Department hardly a day goes by but what this subject comes in for careful attention.

Though we have done a great deal in the area of parts interchangeability within the Maytag organization, I am sure it is still a fertile field and I am grateful to you for stimulating a renewed interest.

I am asking my associates in the Service Department to read the articles you sent me on standardization after which we will meet and delve into this subject more thoroughly. It may very well be that we have done some things which you would find pertinent enough to justify an article in MPM. You will hear from me further at a later date.

R. S. Payne, General Service Manager
The Maytag Co.
Newton, Iowa

MANUFACTURING (PROCESS) ENGINEERS . .

for

WALKER MANUFACTURING CO.
Racine, Wisconsin

Due to planned expansion, openings now exist at several levels in our Process Engineering Department. This department's responsibility is the solving of manufacturing problems in our multi-plant operation. We are one of the leaders in the Automotive parts and Equipment field on *A 100% COMMERCIAL PROGRAM.*

REQUIREMENTS:

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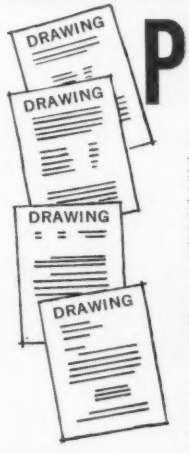
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since 1901

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Speed Queen talks 20 to 30 percent Increase in washer capacity

WITH ITS INTRODUCTION of larger capacity tubs on newer automatic washer models, Speed Queen claims an increase of 20 to 30 percent in washing capacity over "normal size units." Their way of saying this is that "clothes that formerly filled four loads can now be laundered in three." Speed Queen also suggests the use of bulk as an indication of capacity, in preference to the number of pounds a washer holds. They cite the fact that a blanket, for instance, weighs about three and one-half pounds, yet, because of its bulk, makes up a full washer load. Likewise, synthetic fibers will have approximately twice the bulk of an equal number of pounds of natural fibers. *Until a completely satisfactory rating system is devised,* it is pointed out that some manufacturers are simply advising the user to load the washer two-thirds full or up to some given point on the drum or agitator.

This company also reports increased demand for the "*programmed washer.*" "This automaticity should not only prove to be a time saver," says Speed Queen, "but it should also boost consumer satisfaction . . .," and "scientifically designed cycles on new washers 'seal in' the correct washing recipe, insuring proper treatment."

Some manufacturers have reported a "lack of demand" for the top-of-line models incorporating the ultimate in "programming." There is strong opinion at MPM that lack of demand might more properly be stated as lack of good, strong selling at the retail level.

Why greater washer capacity?

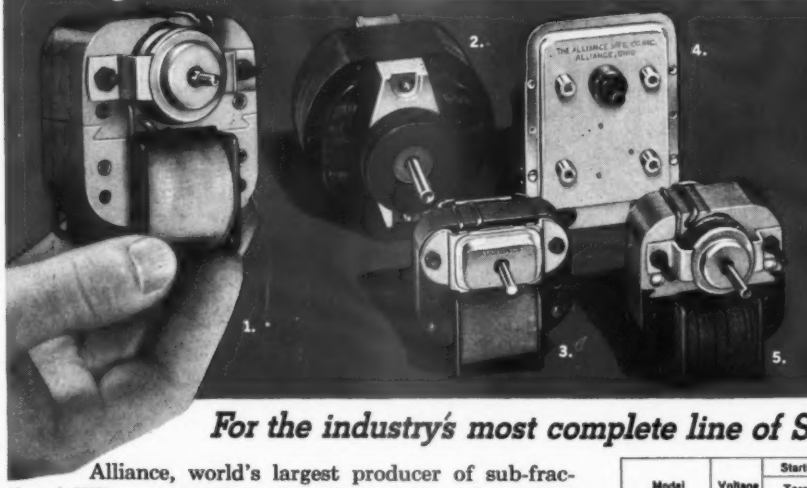
AS BACKGROUND FOR THE CURRENT GE home laundry advertising which features 12-pound capacity, the company offers details from a four-year old survey, which covered 1100 families consisting of automatic washer owners of all brands. The survey covered the characteristics of 8800 wash loads — 70,000 pounds of washing.

The result of the investigation showed the average load to be eight pounds, the average number of loads per week to be eight, and the average week's wash to be 64 pounds. It was found that people with children under three years of age averaged better than 87 pounds, while those with children three to sixteen years old averaged 67 pounds. Couples without children averaged 40 pounds.

Eleven percent of those surveyed washed loads from ten to 12 pounds, and 16 percent washed loads over 12 pounds — 27 percent of all loads were beyond the rated capacity of domestic machines. Sixty-eight percent of the families washed three or more loads on "washday."

Based on these and other pertinent findings, GE started in late 1957 to engineer, test, tool and produce its new washers which were introduced approximately one year ago. Engineering and manufacturing expenditures are quoted as $7 million. It is this washer for which GE claims "20 percent more capacity in 20 percent less space."

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(Subsidiary of Consolidated Electronics Industries Corp.)

Model	Voltage	Starting	Full Load				Weight
		Torque oz./in.	Torque oz./in.	Speed RPM	Input Amps	Input Watts	
JSY 1101	117	1.0	0.4 (pull in)	3600	.285	18	1 lb. 14 oz.
L	117	6.5	8.0	3250	1.20	77	3 lb. 7 oz.
H	117	1.0	1.0	2500	.310	17	1 lb. 0 oz.
JSG	117	225	165	12-14	.490	25.5	1 lb. 7 oz.
JS	117	1.75	2.70	2900	.570	29	1 lb. 2 oz.

ALLIANCE MOTORS

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safe transit

editorial voice of the national safe transit program

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DANA CHASE PUBLICATIONS, INC.

Devoted to improving packaging, shipping, and materials handling methods for the appliance and metal products manufacturing industries. This section contains information on plant experience and industry advances for improving packaging and shipping methods, and prevention of in-transit loss. It also contains information on the National Safe Transit Committee's preshipmet testing program and reports on NST activities.

NSTC — "a partnership" of mutual benefit for shipper and carrier

BY *J. L. Boies* • VICE PRESIDENT, CLAIMS AND INSURANCE, CAROLINA FREIGHT CARRIERS CORP.

AS THE TITLE OF THIS ARTICLE indicates, I firmly believe the National Safe Transit Committee's work provides the basis of "a partnership" which generates mutual benefit for both shipper and carrier. It is my personal conviction that the program has contributed materially in reducing transportation damage and in focusing attention on adequate packaging needs. And more important, I know the National Safe Transit Committee has helped promote genuine interest in the prevention aspect of freight loss and damage.

My introduction to the National Safe Transit Program took place in 1951, when Westinghouse traffic representatives invited me to attend a special carrier meeting in Tampa, Fla. The purpose of this assembly was to discuss unusual damage frequencies on certain appliances being shipped into the Florida territory and to seek the carriers' assistance in resolving the problem. During the meeting, the National Safe Transit testing program and the National Safe Transit label were explained in detail and then documented with film.

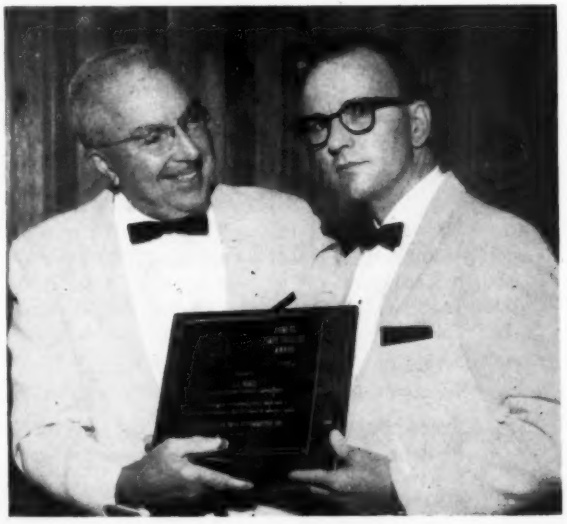
The idea of pre-shipment tests to ascertain the fitness of a packaged product before it left the factory fascinated me. The results of impact tests shown at the meeting appalled me. But I liked the scheme of the composite program — the two-way street cooperation aimed at the reduction of transit damage. Here was an opportunity for carriers to join hands with shippers in "a partnership" which promised unlimited benefits for all participants. Any type of program designed to improve packaging was a good deal, and I was thoroughly convinced the project would prove successful. I made up my mind then and there to support the National Safe Transit Program in every way possible and to cooperate in the safe handling of the certified tested products.

Claim loss ratio reduced from 1.20 to 0.84 percent in 2 years

To my way of thinking, this Tampa meeting couldn't have happened at a more opportune time. In 1951, Class I and II Intercity Common Carriers' national claim loss ratio average was running 1.85 percent, and our own company's ratio was 1.20 percent. It was common knowledge that all carriers needed to reduce their claim payments and thereby eliminate the unnecessary drain on diminishing profits.

After returning from the meeting, I immediately started to work on an educational project which was to be used in acquainting our personnel with the shipper's emblem of participation in the National Safe Transit Program. Educational booklets and a series of posters were designed exclusively to pictorially tell the Safe Transit label story. This material was then distributed to all terminals and used extensively in conducting claim prevention meetings during 1951-1952. Reception to the program was excellent and so were the end results. By 1953, Carolina Freight Carriers Corp.'s loss ratio had dropped to 0.84 percent — the fruits of our labor were clearly evident.

Everyone in our organization, including the owners, became enthused about claim prevention, and this enthusiasm



J. L. Boies, vice president, Claims & Insurance, Carolina Freight Carriers Corp., Cherryville, N.C., is pictured receiving his second consecutive Annual Safe Transit Award for outstanding leadership in reducing in-transit damage loss claims. At left is Ralph F. Bisbee, president, National Safe Transit Committee, Inc., who presented the award earlier this year during the annual meeting of the American Trucking Association, Inc.'s National Freight Claim Council in Dallas, Texas. Boies is now serving the NSTC as transportation consultant on matters pertaining to the trucking industry.

continued throughout the years. Since 1952, my company has won eight ATA National Trophy Awards for outstanding leadership and achievement in the field of freight loss and damage prevention.* We are the only carrier in the history of motor freight transportation ever to have accomplished such a feat. Carolina also boasts an average loss ratio of 0.52 percent for the ten-year period 1951-1961.

First real start in claim prevention credited to NSTC

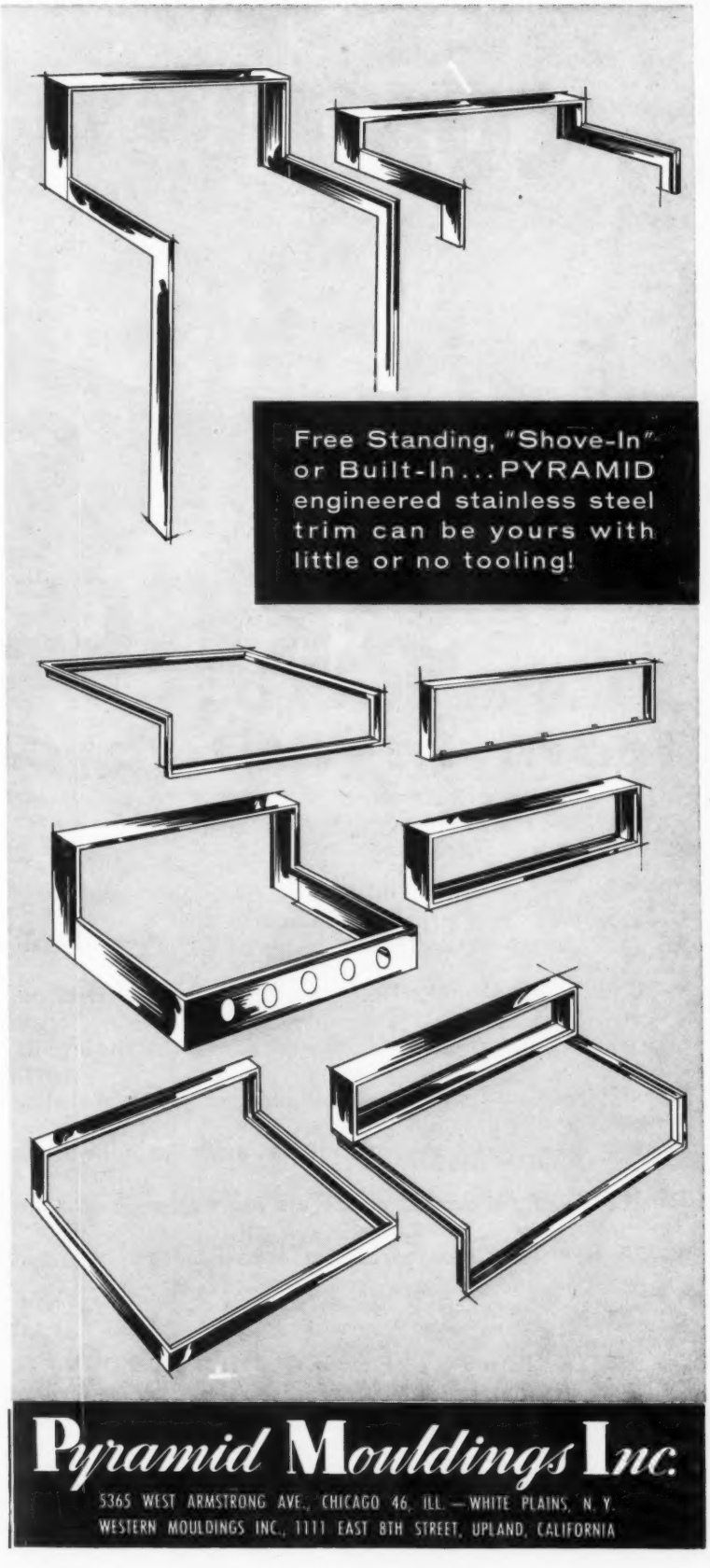
Much of the credit for my company's achievements rightfully belongs to the National Safe Transit Committee. They gave us our first real start in claim prevention and have continued to aid us by improving packaging trends. In fact, help has been afforded us every time NSTC certified one of our accounts' products. You need only to keep this in mind to appreciate the favorable feelings I personally have for the program. And the benefits haven't been one-sided, either. I have seen rewards accruing time and time again to shippers in the form of safe deliveries and reduced packaging costs. Oftentimes, overpackaging is discovered by NSTC certified pre-shipment testing laboratories, and this enables the shipper to use a lighter, less expensive package and still obtain excellent shipping results.

Improved customer goodwill for the shipper

Still another and more important benefit affecting both members of the "partnership" is improved customer goodwill. When products reach destination promptly and in an undamaged condition, the buyer of the goods realizes great satisfaction from the perfect shipping service rendered. This aspect of the NSTC is most meaningful because neither shipper nor carrier would remain in business long without contented customers.

I could relate one experience after another which would substantiate my initial remarks about the National Safe Transit Committee program; however, this would only prove repetitious. My decade of experience with the program has proven its worth. Nothing more need be said except that I would like to see additional shippers and carriers participating in "the partnership" which I personally know will provide them with unlimited benefits.

**Carolina Freight Carriers Corp. was first place winner in the John M. Miller National Claim Prevention Contest in 1960. The company has won four first place awards in the last five years, placing second in the 1957 contest.* ——— *MPM*



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FEBRUARY: A SPECIAL SECTION ON THE AIR CONDITIONING, HEATING AND REFRIGERATION INDUSTRY

MORE ON STANDARDIZATION FOR INCREASED ECONOMY AND RELIABILITY

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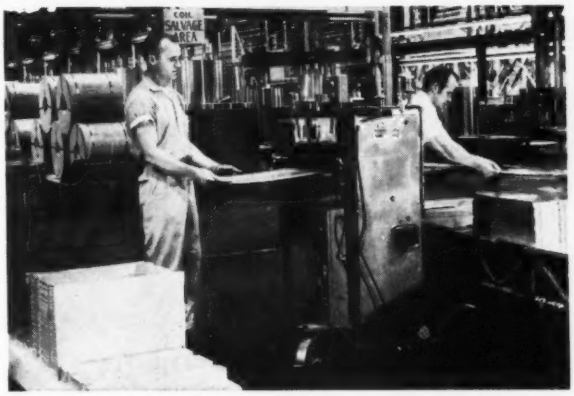
These legs are only a few of the many Heavy Duty Legs designed and manufactured by Wilkenson for Vending Machines, Appliances, Store and Restaurant Fixtures, Kitchen Cabinets, Metal Desks, etc.

Unlike similar legs on the market, these legs are so rugged that they withstand far greater stress and impact than they will ever receive in normal use. Quality-built throughout, they are available in a large variety of sizes and finishes.

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Industry News

→ FROM PAGE 51

building for Laundercenter Corp., a Friendly Frost subsidiary. Laundercenter is a distributor of automatic coin-operated dry cleaning and laundry equipment.

The $500,000 headquarters facility includes a 4000-sq-ft "operating showroom" equipped with 24 coin-operated dry cleaners, 24 double-load washers and 12 Safe-T-Steam dryers.

Beside the "operating showroom," the new headquarters facilities will house sales, sales training and administrative offices and warehouse, service and parts departments.

Republic Steel Dedicates Hot Strip Mill in Warren

Republic Steel Corp. has dedicated a new $55 million, 56-in. hot strip mill at Warren, Ohio.

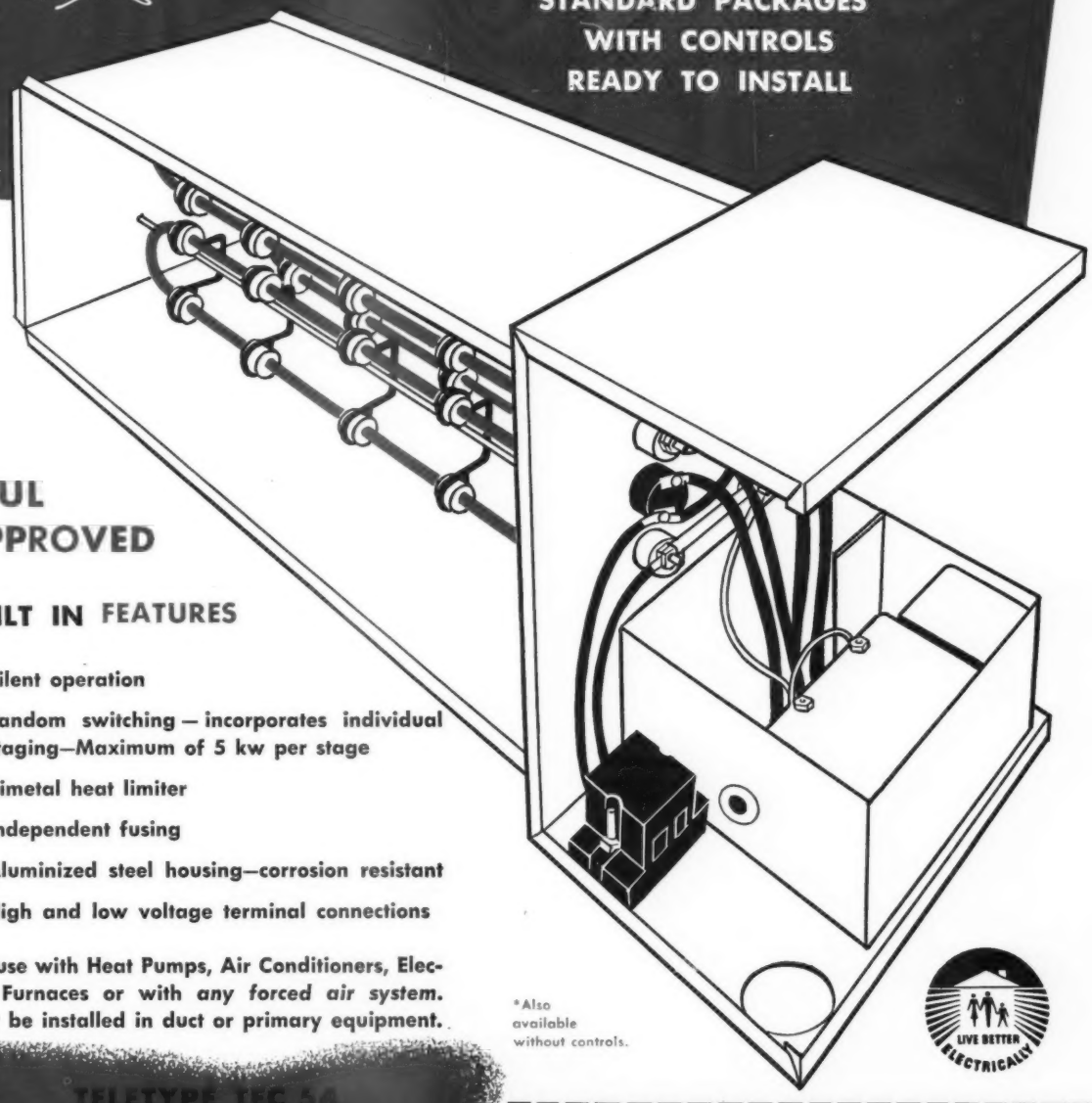
T. F. Patton, Republic president, speaking at dedication ceremonies, said competition — both domestic and foreign, rising costs and rapidly advancing technology were "prime movers" behind the company's decision to build "the most powerful hot strip mill of its size in the country."

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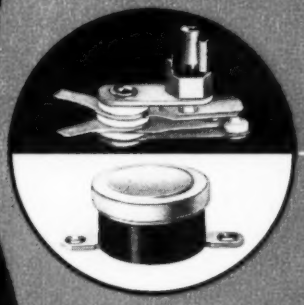
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Stemco Type S Thermostat shown. Other similar bimetal types available in adjustable, non-adjustable, snap-acting, manual reset, probe types, etc.

Stemco Type A Thermostat shown. Other bimetal disc types available in semi-enclosed or potted styles. Ratings, depending on application, to 40 amperes at 240 VAC.

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